FROM A STUDENT TEACHER TO A BEGINNING TEACHER: A STUDY ON THE PROCESS OF LEARNING TO TEACH

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Abstract

The first year of formal teaching is generally found to be particularly traumatic for some beginning teachers. The situation in Hong Kong is felt by most professionals to be even more acute. Though some research has been done on the needs of beginning teachers, hardly any research in Hong Kong or elsewhere has addressed the process of learning to teach. This thesis aims at investigating (i) the alleged 'reality shock' during the early stages of teaching, (ii) sequential developments in the process of learning to teach, and (iii) the formulation and testing of a model to predict and explain progressive changes in the beginning teachers' perceptions of their competence in teaching. A special interest of this study is the opportunity to gather a useful data bank on Hong Kong teachers and to relate the findings towards improving the services in Hong Kong.

Building on previous studies both in Hong Kong and in the international setting, a psychological model is proposed to cover the first year of teaching. Five states, Perplexity, Control Anxiety, Experimentation, Reflection and Integration, serve as useful indices of change in beginning teachers' perception of competence in teaching. The model is evaluated by data from three sources, questionnaires, interviews and follow-up interviews with non-respondents to questionnaire study. The questionnaires are constructed to reflect changes in perceived competence in teaching predicted by the model and pretested on 124 teachers in pilot study. 365 teachers responded in the main study.

The occurrence of 'reality shock' is detected and analysed as a general lowering in beginning teachers' perceived competence in teaching early in their first year.

A factor analysis on questionnaire data shows that the five states are collapsible into two higher order dimensions, namely Survival and Growth states. Their interplay vividly demonstrates the pattern of changes as the process of learning to teach develops and the pattern revealed supports the prediction from the model. By using these higher order states, the 'reality shock' can be more clearly portrayed by the rise or fall of the mean Growth state rather than changes in the Survival state. The relationship between psychological states and reported experience is also investigated.

Revisions to the model are proposed in the light of the findings; and suggestions for further research and for ways of supporting teachers in their induction year are put forward.

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CHAPTER ONE

FROM LEARNING TO TEACH TO TEACHING TO LEARN: AN INTRODUCTION TO THE RESEARCH

> 'An understanding of how people learn would make a more fundamental change to the educational system as a whole than any decision on what should be contained in the national curriculum, for understanding how people learn forces a reassessment of the purpose of learning, the curriculum and the way it is communicated.'
>
> (Cullingford,1990, p. 2)

It has been some years since I graduated from a two-year full-time course from the Grantham College of Education in Hong Kong. But, I can still vividly remember the 'scene' on the very last day of the college term. I gazed at the logo of the College high over the front door and promised myself that I would come back to help the future 'trainees' (the term naturally flowed out from the mouths of lecturers at that time) and it would NOT be the same college again. I said that because I was disappointed with many things inside there and felt quite ungrateful to many of those who 'lectured' in there since I was a bit shocked by the gap between theory and practice after the seven-week teaching practice experience just about a month and a half before the end of the college course in mid-July; and, moreover, I was frustrated for it was too late to know that.

Some years after my graduation from Grantham, I returned to a college to 'lecture'. Though it was not Grantham, I was very excited to work there, giving my best (I thought) !

Till now, I have been working in the same College for some years, still 'lecturing'; but, I am not so sure whether the 'best' that I have been contributing is really the 'best' because there are still many graduating students from my college (and also from the other three as found in the research) possibly speaking more or less the same words to the 'logos'.

The discontent with the college programmes preparing student teachers in the process of learning to teach was part of my personal experience when I left Grantham. The feelings had deepened in the first year of teaching but I blamed the 'laziness' or 'poor academic standards' of those who had trained me. I credited my success in survival, development and attainment of 'maturity' in teaching to my never-say-die spirit and the will-power to survive in order to return to the College to start a new page in teacher education there with 'an unconditional faith in an unconditional meaning' (Frankl, 1988, p. 156). Actually, learning teaching in the 'wilderness' of the staff room and detaching myself from 'the madding crowd' which was so close together was a constant torture for me in the first one or two years because I was reluctant to talk, trying to solve any problems encountered all by myself lest I be regarded as incompetent.

Some years ago, I decided to find a better way to learn through teaching and formed a strong conviction that actual

experience was the best teacher; but after a few more years, I began to doubt whether experience really was transferable as I would feel anxious and puzzled for a short time when I had to change teaching subjects or schools and no obvious improvement in teaching was felt by simply teaching for some years. So, I started to engage myself in more disciplined research work hoping to improve the 'effectiveness' of the process of learning to teach.

I started this research some time ago with the same simple-minded conviction to find a way to help (but whom?). Today, I sit calmly in my study and write this introduction to my thesis and reflect on my process of learning to teach in the whole context of my research experience of devising and testing a model on the process of learning to teach in the first year teachers: I know as clear as crystal that nothing magical has happened in the past years of my work as a teacher educator in a similar college to that in which I had myself received a pre-service course on the process of learning to teach and, to my profound disappointment, it seems that I have simply been regarded by the graduates of the 1990s as one of those lecturers that I had critised many years ago. Is that because nothing has changed in the courses or is it because there exists an inconspicuous cause that it has been overlooked for decades ? At this stage, it is still too early to say to what extent I have found an answer but I am certain that I have come closer to a few of those answers by the end of this research. I think I have learned through teaching and it is also natural for some people to demean the role of pre-service teacher education and prefer a more practical mode of on-the-job training in teaching like those in many other professions. Through the

research I have been convinced that the problems do not exist in the theoretical courses or in experience per se but exist elsewhere.

This thesis reports why and how I devised certain research instruments to use with beginning teachers and how I analysed the data to come to my findings.

Through the self-devised set of two questionnaires and interviews, the perceived competence in teaching of the first year beginning teachers was surveyed with a view to probe for possible patterns of changes across four time points in the first year of teaching; possible causes were then offered with some conclusions and recommendations presented in the end.

The citation from Cullingford in the beginning of this chapter is a summary of what I believe and what I would have had my 'lecturers' do for us many years ago. I tried to gain a better understanding of learning to teach and have presented it in the following chapters.

CHAPTER TWO

A REVIEW OF SITUATIONS AND STUDIES OF BEGINNING TEACHERS AND PRE-SERVICE TEACHER EDUCATION IN HONG KONG

Introduction

Teachers in primary and secondary schools in Hong Kong are trained through two parallel channels: through the government-run colleges of education and the faculty of education of the University of Hong Kong and the Chinese University of Hong Kong. The present state of the teacher education programmes offered in these institutions will be described in Section A of this chapter.

Previous studies of pre-service teacher education and on the studies of beginning teachers in Hong Kong are concisely reviewed in Section B with a brief history of the development of educational research on these topics since 1945 in Hong Kong.

In Section C, based on the background to the research problems elaborated in the previous sections, the set of research problems to be possibly tackled are derived and listed out.

A. An Analysis of Pre-service Teacher Education in Hong Kong

1. The training of teachers with non-graduate status

Teachers of the primary schools have been traditionally recruited from graduates of Form Five or Form Upper Six students who are not offered places in the universities or polytechnics Back in the 1920s, only some of these school-leavers were provided opportunities to be trained as teachers of general subjects at the primary level and Chinese subjects at the junior secondary level through a training school organized by some Chinese educationalists in Hong Kong. A formal teacher training institute, the Northcote Training College, was first started by the Government in 1939 to train non-graduate teachers for the primary and the junior secondary levels. Later when the need for more teachers arose, more colleges were established: Grantham in 1951, Sir Robert Black in 1960 and the Hong Kong Technical Teachers' College in 1974.

At present, secondary 5 and secondary 7 school-leavers meeting the minimum requirements of the colleges, are offered full-time three-year and two-year initial teacher education courses respectively at the four government-run colleges of education in which all staff are civil servants. They are prepared to become Certificated Masters/Mistresses each receiving the same Teacher's Certificate qualifying them to teach general subjects at primary level and two elective subjects up to secondary 3 level, that is, the total spectrum of free compulsory education for all children and youths of seven to fifteen.

All courses (except one three-year course at Grantham) are

offered in the English medium except for the elective subjects of Chinese and the Chinese History. It is worth noting that while the majority of the secondary schools are Anglo-Chinese, using English as the formal medium of instruction, the great majority of the primary and the kindergarten schools use Cantonese as the medium of instruction (which is a dialect spoken in South China and is slightly different from the written literary style of Chinese commonly used by all Chinese).

For all three-year and two-year teacher education courses, there are four areas to cover: Area A, Professional Studies, Area B, Elective Studies, Area C, Practical Teaching and Area D, General Studies. The Professional Studies, a compulsory programme, include education, education technology, general methodologies (primary and secondary) and primary studies (covering the general subjects taught in primary classes). As for Area B, students of the three colleges, Northcote, Grantham and Sir Robert Black have to study two electives chosen from the list of thirteen secondary school subjects: Chinese, Chinese History, English, Economic and Public Affairs, History, Geography, General Science, Mathematics, Social Studies, Art and Design, Home Economics, Music and Physical Education (the last four are called cultural subjects). Students of the Hong Kong Technical Teachers' College have to choose one subject from Commerce, and Design and Technology and another from Chinese, English, Science and Mathematics for elective studies. In Area C, all first year students of the first three colleges have to go on a seven-week practical teaching session from March to May; the second-year students of the three-year course have to do another five-week practical

teaching block in the primary from November to December; and all final year students have to practice teaching in the junior secondary classes from secondary 1 to secondary 3 for seven weeks from March to May. Students of the Hong Kong Technical Teachers' College have to practice in the same period of time as those of the other colleges but all in the secondary classes. All students are required to take the compulsory courses of Language Skills (English) and Language Skills (Chinese) throughout their years of training in Area D, General Studies; but they can choose one from dozens of Complementary Programmes in each of the first two years so that they may extend their abilities in organizing interest groups or courses for extra-curricular activities in schools (Ref. Colleges of Education, Education Department, Hong Kong, 1991, pp. 5-24).

All courses in teacher education are unit-based with one unit being equivalent to about 15 contact hours. To take the example of the two-year course in Northcote, the standard number of units to be covered in all four areas should be 39, 40 (46 if a cultural subject is elected), 30 and 26, making a total of 135 (141) units by the end of the course. For the three-year course in Northcote, unit totals for the Areas A, B, C, and D are 51, 60, 45 and 39 amounting to a total of 195 by the end of the three years of study (Ref. Handbook for Full-time Two-year Course (English) 1988-1990; and Handbook for Full-time Three-year Course (English) 1987-1990). The proportions of units in all areas of teacher education courses in other colleges are slightly different but all curricula among the colleges are essentially based on

the same core curricula agreed upon by the joint college boards of different electives under the central joint college board of principals.

2. The training of teachers with graduate status

During the pre-1965 period, teachers with graduate status were only able to receive training, if they wished, from the school of education of the University of Hong Kong since secondary subject teachers were required to possess a university degree in the subject and teach up to the form upper six level. So, in the 1950s for instance, only about twenty to thirty graduates were trained in a year. By 1965, with the establishment of the School of Education in the Chinese University of Hong Kong, the output rate of trained graduate teachers had doubled. In 1967, out of the 7500 or so graduate teachers in schools only 2391 were trained (Cheng, 1987, p. 219), i.e. about 30% trained. Though the development of initial teacher education courses in the universities has been considerably expanded to produce about 1000 teachers per year through the full-time one-year and part-time two-year post-graduate training programmes, the speed of school building programme exceeded the growth rate of trained graduate teachers at times. In September, 1989, only about 68% of teachers with recognized university degrees were formally trained, and it is widely believed that the situation will not be considerably improved in the 1990s.

Through the one-year full-time or two-year part-time study in the day/evening course, a graduate of a recognized university

would be awarded a postgraduate diploma in education from the Chinese University of Hong Kong (which is equivalent to a PGCE in the United Kingdom). Similarly, one would be awarded the post-graduate certificate in education after finishing a one-year full-time or two-year part-time evening course from the University of Hong Kong.

The curriculum of the 'PGCE' course at the Chinese University of Hong Kong includes I. Curriculum and Teaching Methods, II. Psychology and Counselling, III. Society, Institution and Organization and IV. Culture and Thought, and an independent project on any of the four categories mentioned. An eight-week practice teaching is also required for the full-time students (Ref. Chinese University Calendar, Chinese University of Hong Kong, 1989-90, pp. 222-223). The curriculum of the PGCE courses at the University of Hong Kong is similar to that of the Chinese University in essence though they have been different in emphasis.

At present, since the salary of all teachers in the public sector, i.e. the government and aided, is paid by the Hong Kong Government, graduate teachers are encouraged to get their formal initial training within ten years or they will not be given any increments in salary afterwards nor promoted to higher posts of teaching and/or school administration.

To illustrate the recent distributions of Hong Kong primary and secondary teachers in their academic, professional qualifications and school types, two tables of the 1989-1990 school term is presented for reference (Table 2.1 & 2.2, p.23).

TABLE 2.1

Distribution of Hong Kong Primary School Teachers in Academic, Professional Qualifications and School Types
(Adapted from Table IIa of Annual Summary 1989-90, Education Department, Hong Kong (1990, p. 63))

Academic Qualification	Professional Qualification	School Types: Government* (G)	Aided** (A)	Private*** (P)	Total	% trained (G+A)	% trained (G+A+P)
Graduate	Trained	13	492	27	532	61.81	54.45
	Untrained	4	308	133	445		
Non-graduate	Trained	1271	14590	247	16108	94.04	88.13
	Untrained	0	1006#	1163#	2169		

* : All teachers are civil servants governed by civil service regulations.
** : Teachers are employed by different school boards but all are paid by the central government.
*** : Employment and salary scales are controlled by private school boards.
# : Some are receiving training at in-service initial teacher education institutions.

TABLE 2.2

Distribution of Hong Kong Secondary School Teachers in Academic, Professional Qualifications and School Types
(Adapted from Table IIa of Annual Summary, Education Department (1989-90), Hong Kong (1990, p.63))

Academic Qualification	Professional Qualification	School Types: Government* (G)	Aided** (A)	Private*** (P)	Total	% trained (G+A)	% trained (G+A+P)
Graduate	Trained	1067	7280	259	8606	72.01	67.78
	Untrained	68	3176	847	4091		
Non-graduate	Trained	699	4517	213	5429	93.44	8 .07
	Untrained	5	361#	985#	1351		

* : All teachers are civil servants governed by civil service regulations.
** : Teachers are employed by different school boards but all are paid by the central government.
*** : Employment and salary scales are controlled by private school boards.
# : Some are receiving training at in-service initial teacher education institutions.

B. A review of studies of pre-service teacher education, and beginning teachers in Hong Kong

Fewer than eight studies of teachers and teacher education in Hong Kong were reported in the years between 1945 to 1964. After 1965, considerably more studies were carried out as more trained graduate teachers and trainers became more inclined to conduct educational research when the school of education was set up by the Chinese University of Hong Kong in 1965. There were 25 studies on teachers and/or teacher education from 1965 to 1974 and 61 related studies from 1975 to 1982 (Ref. Chung et al., 1991, p. xviii). In the early 1980s, the School of Education, University of Hong Kong initiated the Advanced Diploma in Education and the Master of Education courses by course work for practicing teachers to further their studies in education through the part-time day-release mode (two three-hour sessions per week during the university terms). Studies on a wide range of educational issues have thus blossomed since then. But relatively fewer studies were on teacher preparation and there were hardly any studies on beginning teachers in the 1980s.

1. Studies on pre-service teacher education

In the 1960s, two studies were on the teacher training programmes in general: one on Elementary Training Programme (Cheng, 1961) and one on Problems related to teacher preparation from 1943 to 1963 in Hong Kong (Chan, 1968). One pioneering study by Leong (1964) was an experimental study on the attitudes and abilities of the pre-service teacher trainees of a training college and those of a 'diploma in education' (an equivalent to

PGCE) class at the University of Hong Kong. Later Leong reported another studies on the motives for the choice of the teaching profession of both the college trainees and the postgraduate students working for the 'diploma in education' (Leong, 1969). The major message from both studies was that the non-graduate trainees were generally less motivated and of lower academic abilities than those of the 'diploma in education' classes though both groups were reported to be 'influenced more by practical considerations in terms of monetary reward and security of occupation and less by idealistic factors such as opportunity of keeping up with favourite studies and possibility of doing good' (Leong, 1964, p.122).

In the 1970s, besides a general paper on teacher education in Hong Kong (Hinton, 1975), the other studies were concentrated on two aspects: on curriculum studies of certain subjects in the colleges of education (N.B. all teachers' training colleges were renamed as colleges of education from 1967); and on teacher trainees' attitudes and role conceptions and their changes in the course of study. Studies on the subject curricula were mainly associateship reports at the Institute of Education, University of London, such as Chan (1972), Chau Lam (1975) and Luk (1976). All three reports mentioned were comparative studies of teacher training on certain subjects in Hong Kong and in certain teacher training institutions in U. K. Examples of the second emphasis were Lai's paper on the attitudes, education assessment and teaching performance of college education students (Lai, 1973) and Luk's M. Phil. thesis on the conceptions of teachers' role as held by pre-service and inservice teacher trainees (Luk, 1978).

Luk's study was a large scale one involving about 500 pre-service and 600 inservice teacher trainees of all three colleges of education. Through the use of a Teacher Role Questionnaire, Oliver's Survey of Opinions Questionnaire and the Minnesota Teacher Attitude Inventory, Luk concluded that a) there were significant changes in the teacher trainees' conceptions of the teacher's role by the end of the course; b) the teacher trainees had a shift to a more authoritarian orientation on the conceptions of traditional roles of teachers and c) though there was a positive shift for the inservice trainees on the conceptions of emergent roles of the teacher by the end of the course, there was a negative shift for those pre-service teacher trainees. Luk stated that

> '... it is apparent that the pre-service students probably due to their lack of practical teaching experience at the beginning of the course, were inclined to be idealistic about the emergent roles of the teacher.
> ... After having gone through periods of teaching practice they had come to terms with reality...
> ... the effect of teaching practice on the role conceptions of inexperienced teachers would contribute a worthwhile topic for further investigation' (Luk, 1978, p.168).

Though Luk had pointed out the impact of teaching practice on the attitudinal changes of the pre-service teacher trainees, he did not explicitly state the implications of this phenomenon for the teacher education curriculum as a whole, nor the effect of this negative change on the trainees' further development in their teaching career, especially in their first year of teaching.

In the 1980s, three research studies of the impact of teaching practice in the primary and the junior secondary classes on the

teacher trainees of a college of education at various levels of their training were conducted. The findings were strikingly similar to the other national studies reported: there were general negative shifts, after a teaching practice of five to seven weeks, in their attitudes from a more individualized, liberal and open perception of education to a more standardized, authoritarian and restrictive perception of education, which were obviously not those explicitly advocated by the college lecturers before the teaching practice. These reports agreed that it was alarming to see that the effect of just a few weeks' practical experience could change the general attitudes of the trainees and it would only be natural for all parties concerned in teacher education to face up to this 'reality' and to re-evaluate the practicability of the teacher education curriculum as a whole (ref. Chan, 1983; Teacher Education Study Unit, N.C.E. 1984, 1986).

Still, in the three studies, though more explicit and specific recommendations were suggested, there was still much room for more in-depth studies on the causes for these phenomena, which were collectively termed as 'reality shock' in some studies of teacher trainees and beginning teachers (ref. Veenman, 1984). So, in the mid-1980s, a few educational researchers in Hong Kong began to show their interest in the studies of beginning teachers as a result of the stimulation of Veenman's review of previous research and the unsatisfactory effect of teacher education programmes judged from the feedback from many former trainees of the colleges and the universities.

2. Review of the pioneering studies of beginning teachers in Hong Kong

In 1987, Cooke and Pang (1987) reported a pilot study of the experiences and needs of a group of trained and untrained science beginning teachers in Hong Kong who were graduates from the University of Hong Kong. Following up the 1987 study, Cooke led a more comprehensive study on a larger scale with 129 trained (who have received the certificates of education, an equivalent of PGCE), partially trained (who had received a one-week intensive pre-service orientation programme) and untrained beginning teachers though they had not explicitly indicated the exact number in each group in their reports (Cooke et al., 1990; Cooke & Pang, 1991).

Cooke and his colleagues reported that, in their 'first systematic investigation of beginning teachers and of induction provision in Hong Kong' (Cooke et. al., 1990, p. 67), three studies were completed: a) a comprehensive survey (1986-87), the Teacher Induction Study, conducted with questionnaires adapted from studies of Taylor & Dale (1971), Tisher et al. (1978, 1979) and DES (1982) and a diary adapted from Bradley & Eggleston (1976); b) an interview study of 18 beginning teachers in three different subjects and different training backgrounds (1987-78)*; and c) a survey conducted among principals (headteachers) to obtain their perceptions of the problems and needs of beginning teachers. The major objectives of these studies were the search for information about experiences, needs, and differences in

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*: This interview study was described in Cooke et al. (1990) but not in the report of the same study in Cooke & Pang (1991, p.94).

first year beginning teachers between those with trained, partially trained and untrained backgrounds thus building the foundation of a regional study of beginning teachers similar to many national studies reviewed in Veenman (1984). Since the target groups of study were graduate teachers from only one of the two schools of education in Hong Kong, more extensive studies on graduate teachers, trained non-graduate beginning teachers from the colleges of education and untrained non-graduate beginning teachers are expected to be conducted and compared and contrasted with findings of Cooke et al. (1990, 1991).

The major findings of these pioneering studies have revealed that a) all beginning teachers experienced a 'shock', in other words a sudden realization of the difference between their expectations and reality in schools. This is of varying intensity. These findings are in line with most studies reviewed in Veenman (1984, p. 143) but the trained group in general adapted better to the new changes than the other two groups; b) induction measures were recommended to 'maximize the likelihood of enhancing factors', such as a reduced workload, classes of pupils with good abilities and good behaviour in classrooms, and more helpful colleagues and supportive administrators, and to 'minimize the occurrence of deterring factors', such as heavy workload, poor and disruptive pupils in classroom, and lack of support from school administration. Finally they suggested a list of recommendations for the improvement of initial teacher education (Cooke & Pang, 1991, pp. 105-109).

Referring to the three major sets of findings mentioned above,

it is clear that Cooke's team have identified the various problems, needs and changes over time of the groups of Hong Kong beginning teachers; but it appears that they have not been explicit enough to show how the beginning teachers had coped under the impact of 'reality shock' (or whether there were some who did not encounter any). To compare and contrast the group of trained beginners with those untrained counterparts (one-week partially trained ones can hardly be regarded as trained to any extent in the practical sense!), did not solve the riddle of the extent of a 'reality shock' for beginning teachers, who were basically trained as reported in Veenman's monumental review of the international studies of beginning teachers. If the basic causes of the traumatic effect on many beginning teachers during the adaptational period are not studied in detail, it is highly doubtful whether the designers of induction programmes could accurately cater for the specific 'needs' of these teachers, both in physical and psychological terms. Through the interplay of 'enhancing' and 'deterring' factors identified, three types of beginners were identified: positive survivors, marginal survivors and leavers (Cooke & Pang, 1991, p. 105); but as there were no distinctions made between trained and untrained teachers in the reports, it is worth exploring further how the trained beginners changed at different points in time within the first year of their teaching.

It is natural for the untrained to have second thoughts about teaching after their first attempt at getting a job, but it means an entirely different thing for the disheartened trained teachers to leave teaching for good after the first year. It seems that

Cooke's team has not taken notice of previous studies of the impact of teaching practice on the teacher trainees by Luk (1978), and more specifically by Chan (1983) and the Teacher Education Study Unit (1984, 1986) revealing that there existed an obvious sudden impact when putting theory into practice through just a few weeks of practical teaching in school. Entry into the teaching profession would probably intensify this sense of 'shock'. Studies of the development of the trained beginning teachers, especially in their first year, are thus more urgently needed than studies of some other groups.

C. Statement of problems to be possibly tackled

With reference to the background to the present research presented in the previous sections, the initial problems that would lead to the formulation of more specific research questions for possible future research are listed as follows:

1) When would the beginning teachers in their first year of teaching encounter, if any, difficult times during which they feel puzzled, frustrated, angry and helpless ?

2) What were the problems/difficulties they encountered during different times of the first year ?

3) How did they deal with the problems/difficulties encountered ? Which of them were they unable to solve in the course of the year ?

4) From what source(s) would the beginning teachers seek assistance to deal with the problems/difficulties encountered:

(a) the knowledge and skills learnt in the teacher education programmes,

(b) their friends and/or former collegemates,

(c) colleagues and/or school administrators,

(d) other personnel outside the schools, and

(e) their own previous experiences ?

5) What were the beginning teachers' perceptions of teaching and learning by the end of the first year of full-time teaching in the primary or secondary schools ?

6) What were the differences in experiences and teaching strategies between the beginning teachers who had encountered some difficult times in their first year of teaching and those who did not seem to have experienced any ?

In the next chapter, a more comprehensive review of the relevant literature on all aspects presented in the above-mentioned lists of problems follows, and a more specific set of questions for research is then reformulated.

CHAPTER THREE

GENERAL REVIEW ON STUDIES OF BEGINNING TEACHERS AND TEACHER DEVELOPMENT

Introduction

There are two parts in this chapter : Part I, Studies exploring Beginning Teachers' Problems, and Part II, Studies Dealing with Beginning Teachers' Problems. There are two sections in Part I: Section A deals with the possible causes of beginning teachers' problems, and in Section B the scope and nature of the problems reported in previous studies are reviewed critically. The four sections of Part II are concerned with the possible alternatives reported in dealing with beginning teachers' problems. Through a review of pre-service teacher education and the induction of beginning teachers described in Sections A and B, two different kinds of literature on the problems of beginning teaching, and of methods to help beginning teachers to solve their problems both before and during their full-time teaching career, are reviewed and commented on.

Part I: Beginning Teachers' Problems

A. Possible Causes and Perceived Problems

Problems encountered by beginning teachers, especially in their first year of teaching are generally regarded as generated during the dramatic and traumatic transition from teacher training to a full-time teaching post, and this phenomenon has been called the 'reality shock' (Wiseman & Start, 1965; Gibson, 1976).

The reality shock indicates 'the collapse of the missionary ideals formed during teacher training by the harsh and rude reality of everyday classroom life'(Veenman, 1984). Similar views are also echoed in the studies of Pataniczek and Issacson (1981) and Adams (1982).

But, as Veenman stated, 'reality shock' should not be regarded as shorted-lived. In fact,

> 'it deals with the assimilation of a complex reality which forces itself incessantly upon the beginning teacher, day in and day out. This must be mastered continually especially in the first period of actual teaching.' (Veenman, 1984, p. 144)

1. Possible causes

Ryan (1979) speculated that beginning teachers as a group experience reality shock due to the following reasons:

a) They might essentially be undertrained;

b) there are no clear selection criteria in teacher training;

c) the beginning teachers do have a general training but they are not trained for specific jobs in specific schools.

The first year of teaching is also the period of initiation

into adult work in which new teachers have to be away from home, adapting to the new living and working environment (Levinson et al., 1978).

Yet putting a heavy emphasis on the inadequacies of initial teacher training seems to exclude some possible or even major causes for the problems encountered by beginning teachers in their teaching. It is possible that by focussing solely on pre-service teacher education and not including the work-place environments of beginning teachers, an insufficiently comprehensive and probably one-sided view is created.

Muller-Fohrbrodt et al. (in Veenman,1984, p.147) grouped the causes for the reality shock in the following two ways: personal and structural causes. Personal causes are related to making a wrong choice of teaching as a profession, and to inappropriate attitudes and unsuitable personality characteristics. Structural causes include inadequate professional training, a problematic school situation such as an authoritarian climate, a fixed organizational structure, inadequate staffing and resources, insufficient guidance and support, isolation and loneliness, pressure from parents or multiplicity of tasks.

It is difficult to pinpoint which causes are specifically encountered under what situations and it is not possible to relate beginning teachers' characteristics to any of the structural causes.

Several questions are posed by these proposed causes of the reality shock:

a) Are all causes proposed generally found in all school

settings at all times ?

b) Will all beginning teachers generally encounter problems due to the proposed causes ? and

c) On what assumptions are the proposed causes based and why ?

With these questions about causes in mind, what seems to be missing from the analysis so far is the beginning teachers' own perspectives and it may be helpful to look at their problems through their own eyes.

2. Perceived problems

A comprehensive review of the perceived problems of beginning teachers was conducted by Veenman (1984). It was based on 83 international studies (USA 67%, Europe 27%, Australia 4%, Canada, 2%). The research methods used were mainly questionnaires (82%) and interviews (13%). The perceived problems of the beginning teachers were not grouped under clearly stated categories though the most frequently perceived problems were tabulated according to the following criteria : all studies, elementary level, secondary level and elementary and secondary. The perceived problems of beginning primary and secondary teachers from Veenman (1984) are given in Tables 3.1 and 3.2 (p. 42 & 43) which have been constructed to relate also to the work of Vonk (1983) and Jordell (1987).

Vonk (1983) initiated a survey of the perceived problems of beginning teachers based on a structured diary for the beginning teacher, a questionnaire for his/her students, and an interview for the beginning teacher after each session. From his findings,

he described beginning teacher development as having two stages in the first year: the threshold period and the period of "growing up". For the first 5 to 6 months, the major problems of the threshold period are basically arising from the micro-level such as problems with content of learning materials, with organization of teaching and learning activities, with pupil control, discipline and the establishment of rules, with pupils' motivation and participation, and with feelings with respect to personal preferences and to relations with individual pupils.

Considerably fewer problems were reported at the macro-level. These were problems in relation to school organization, contacts with colleagues, contacts with the school management and contacts with parents. TABLES 3.1 & 3.2 (ref. p.42 & 43), Column (3), show that the ratio of micro-level problems to macro-level problems is 2 : 1 by the end of the first year. Veenman's summary can be regarded as a support for Vonk's study.

Jordell (1987) also reported a study of the socialization of beginning teachers. Two sets of influences on beginning teachers were suggested: personal influences and structural influences. Personal influences are from other persons with whom the teacher interacts, e.g. students, colleagues, administrators and parents. Structural influences are from structures within which teacher works,e.g. classroom level, school/institution level and societal level. From his study, he concluded that at the classroom level, the impact of structural influences was much more important than the personal influences but no explicit data were presented. In Column (4), TABLES 3.1 and 3.2, Jordell's concept is used to identify the problems delimited by Veenman. From the results,

it appears that
the ratio of the problems in the structural influences to the problems of the personal influences is 2 : 1 by the end of the first year, a support for Jordell's study.

By comparing and contrasting TABLES 3.1 and 3.2, similarities and differences between the top thirteen perceived problems of beginning teachers in the primary and the secondary settings may be summarized as follows:

1) Out of the top thirteen perceived problems, nine are in common at both levels;

2) The top three are the same set of problems with 'Classroom Discipline' ranking as the first on both lists;

3) In the primary table, Vonk's ratio of micro-level to macro-level is 9:4 and Jordell's ratio of structural influences to personal influences is 9:4, but those of the secondary level are 11:2 and 9:4 respectively. This may imply that the secondary beginning teachers are more concerned with matters related to their work within classrooms and with pupils than those of their primary counterparts;

4) The four problems within the top thirteen found only in the primary group are 'Relation with parents (3.5)', 'Organization of classwork (5), 'Planning of lessons and schooldays (11)' and 'Inadequate school equipment (11)'. Out of these,two are macro-level. The four problems restricted to the secondary group within the first thirteen problems are 'Effective use of different teaching methods (9.5)', 'Determining learning level of students (9.5)', 'Dealing with slow learners (9.5)', and 'Knowledge of subject matter (12.5)' which are all micro-level and closely

related to student learning matters.

It is thus worth investigating the perceived problems of beginning teachers separately at the primary and secondary levels in further research such as that to be reported in this thesis.

All the previous studies reviewed seem promisingly comprehensive and informative but they leave a number of questions unanswered. MacDonald & Elias (1983) pointed out that there are two major / important omissions:

a) 'the absence of studies which relate differences in the characteristics of beginning teachers to their receptivity to certain form of training and to the kinds of problems they have' and

b) 'the failure to relate the characteristics of the setting in which the teacher begins to teach or learns to teach to the kinds of problems they have or do not have.' (MacDonald & Elias,1983,p.4)

Veenman also pointed out that most previous studies in the perceived problems of beginning teachers can give

'little or no information about the features of educational situations that teachers experience as problematic, about the psychological dimensions of meaning underlying these situations, and about the significant personal characteristics of beginning teachers which interact with these situations.' (Veenman, 1984, p.168)

It is therefore necessary to probe into the person-specific and situation-specific nature of these problems.

There is a very large empty space within which the development of the cognitive and affective states in the transition from teacher trainees to beginning teachers is still unexplored and so

is a worthwhile area for research.

The next section examines work which has attempted to describe development and suggests frameworks within which transitional experience may be explored.

Table 3.1

The 24 Most Frequently Perceived Problems

of Beginning Primary Teachers

(1) Rank	(2) Problems	(3) Level	(4) Influence
1	Class discipline	I	S
2	Dealing with individual differences	I	P
3.5	Motivating students	I	S
3.5	Relation with parents	A	P
5	Organization of class work	I	S
6.5	Assessing students' work	I	S
6.5	Insufficient materials and supplies	I	S
8	Dealing with problems of individual students	I	P
11	Heavy teaching load resulting in insufficient preparation time	I	S
11	Relation with colleagues	A	P
11	Planning of lessons and schooldays	I	S
11	Awareness of school policies and rules	A	S
11	Inadequate school equipment	A	S
14.5	Effective use of different teaching methods	I	S
14.5	Knowledge of subject matter	I	S
16.5	Burden of clerical work	A	S
16.5	Relation with principal/administrators	A	P
20	Determining learning level of students	I	S
20	Dealing with slow learners	I	P
20	Dealing with students of different cultures and deprived backgrounds	I	S
20	Effective use of textbooks and curriculum guides	I	S
20	Large class size	A	S
23	Inadequate guides and supports	A	S
24	Lack of spare time	I	P

(1) & (2): Adapted from Table II, Veenman (1984, p.154-155).

(3): Ref. Vonk's study (1983): I=Micro-level & A=Macro-level.

(4): Ref. Jordell's study (1987): P = personal influences;
S = structural influences.

TABLE 3.2

The 23 Most Frequently Perceived problems

of Beginning Secondary Teachers

(1) Rank	(2) Problems	(3) Level	(4) Influence
1	Classroom discipline	I	S
2	Motivating students	I	S
3	Dealing with individual differences	I	P
5	Assessing students' work	I	S
5	Dealing with problems of individual students	I	P
5	Relation with colleagues	A	P
7	Heavy teaching load resulting in insufficient preparation time	I	S
9.5	Insufficient materials and supplies	I	S
9.5	Effective use of different teaching methods	I	S
9.5	Determining learning level of students	I	S
9.5	Dealing with slow learners	I	P
12.5	Awareness of school policies and rules	A	S
12.5	Knowledge of subject matter	I	S
15	Relation with parents	A	P
15	Relation with principal/administrators	A	P
15	Planning of lessons and schooldays	I	S
19	Organization of class work	I	S
19	Inadequate school equipment	A	S
19	Dealing with students of different cultures and deprived backgrounds	I	S
19	Effective use of textbooks and curriculum guides	I	S
19	Lack of spare time	I	P
22.5	Burden of clerical work	A	S
22.5	Inadequate guidance and support	A	S

(1) & (2): Adapted from Table II, Veenman (1984, p.154-155).

(3) Ref. Vonk's study (1983): I=Micro-level; A=Macro-level.

(4) Ref. Jordell's study (1987): P = personal influences;
S = structural influences.

B. Development of Beginning Teachers

1. Study of Change in Human Development: an initial search for a research framework on the study of beginning teachers

Gergen (1977) distinguished three major approaches in the study of the change in human development: the ordered-change orientation, the stability-orientation and the aleatory-change orientation. The ordered-change orientation assumes that developments are to be constituted by stages --- patterned or orderly changes across time. Kohlberg (1973), based on this orientation, dealt with the biological-maturational, the sociocutural and the cognitive-structural stages of conceptions. The stability-orientation focuses on stability rather than change and aims at identifying consistent aspects rather than those which are transitory. Several different kinds of stability are suggested. The aleatory-change orientation also focuses on change but is based on the assumption that the courses of life of individuals are neither universal nor invariant. It emphasizes how specific environmental influences vary across time and culture. Impacts of significant life events in specific time and space contexts affect the directions of change in the course of life.

Many developmental psychologists have adopted an ordered-change orientation to look at childhood and a stability-orientation to look at adulthood.

Perceptions of a variety of events in teaching may vary in intensity according to the individual. However, as the background of teacher education and school organizational structures and school curricula are strikingly similar (or even uniform in

government schools), it is highly likely that more general trends of change might be detected in the groups of beginning teachers who have been trained through the pre-service initial teacher education courses in government teacher education colleges in Hong Kong.

As the third orientation is concerned with a changing individual in a changing time and space context, it is more appealing than the other two as the basis on which to form a conceptual orientation for the study of beginning teachers' changes in the process of learning to teach in the first year.

While the aleatory approach to developmental change is the most appropriate there are studies which suggest that socialisation must also be taken into account.

2. From Developmental Frameworks to Socialisation Frameworks

Referring to the conceptual framework used, Veenman (1984) summarized recent research on teacher development in three main areas: Developmental Stages of Concerns, the Cognitive Developmental Framework and the Teacher Socialization Framework. Research on teachers' concerns over time within a conceptual framework of phases of change (e.g. Fuller 1969; Adams & Martray, 1981) were grouped under the area of Developmental Stages of Concerns. The second area was based on theories and concepts of cognitive development assuming that the development of beginning teachers results from changes in their cognitive structures (e.g. Glassberg, 1979; Sprinthall & Thies-Sprinthall, 1983). The Teacher Socialization Framework focused on the changes of the

beginning teachers in their social contexts (e.g. Gehrke & Yamamoto, 1978; Tabachnick et al., 1983). For the convenience of conceptual clarity in this study, the first two areas of Veenman's are combined under one topic as they are dealing with developmental stages and renamed as, the Developmental Stages Framework. This contrasts with the Teacher Socialisation Framework.

Besides Veenman's classification, Vonk (1987), reviewing the literature about teachers' professional development, suggested a three-approach framework for the delimitation of related research in this area: the personal development approach, focusing on the process of individual growth of beginning teachers (Glassberg, 1979), the teacher personalization approach, focusing on the process of acquiring expertise by beginning teachers (Brophy 1979; Heath & Nielson, 1974) and the teacher socialization approach which focuses on beginning teachers' adaptation to the norms, values and rules of the professional environment (Lacey,1977; Gehrke & Yamamoto, 1978). Again personal, personalisation developments are differentiated from socialisation.

Unlike Veenman's Teacher Socialization Framework, Vonk's teacher socialization approach is further sub-divided into two categories: research within the normative socialization paradigm which focuses on the influences of environmental agents on beginning teachers (Lacey, 1977; Ryan, 1986) and the research within the interactive socialization paradigm which sees the socialization process as a mutual interaction between the beginning teachers and their professional environment (Vonk, 1983,

1987).

Research on first year beginning teachers may be considered within these different conceptual frameworks. With respect to research within the Developmental Stages Framework, Fuller's 'teaching phases' (1969) influenced subsequent analyses of similar trends. Beginning teachers were described as passing through three distinct phases: first, the phase of 'survival concerns' when the beginning teacher first encounters real classroom situations; second, the phase of 'teaching situation concerns' as the beginning teacher becomes more confident with his or her control of the pupils and third, the phase of 'concerns about the pupils' needs, feelings and their individuality.' Ryan (1986), following Fuller's ideas, identified four stages through his case studies. He suggested that a beginning teacher in his or her first year of teaching may have to go through several stages before professional competence is acquired: they are the 'fantasy' stage, the 'survival' stage, the 'mastery' stage and the 'impact' stage. In a comparison of his own work with Fuller's account, Bullough (1987) found that as the beginning teacher moves into the 'mastery' stage, the mode of planning changes and with this change come either enhanced or reduced opportunities for future professional growth and development.

As the three studies of Fuller (1969), Ryan (1986) and Bullough (1987) are based on stage models, a general hierarchical and invariant sequence of changes in the cognitive structures of the beginning teachers is assumed; and a progression from lower competence to higher competence is postulated in the model.

Beginning teachers who would adopt a competence of a higher stage without obviously passing through the lower ones or those who may change from higher stages to lower stages after they have attained the higher stages through the lower ones are not easily explained by these stage theories; and since the background of the teaching environment involves people in the community such as school administrators, parents and inspectors, social and cultural factors are inevitably involved in the teaching lives of the beginning teachers. A teacher socialization framework of research seems to be more appropriate in the present study.

Within the Teacher Socialization Framework, Lacey (1977) gave a widely quoted tripartite schema for analyzing the processes of adaptation involved in becoming a teacher: first, the 'Internalized Adjustment' period in which the individual complies with constraints and believes that constraints of the situation are for the best; second, the 'Strategic Compliance' period in which the individual still complies with the authority figures' definition of the situation and the constraints of the situation but retains private reservations about them; and third, the 'Strategic Redefinition' period during which the individual tries to exert influence on those in power to change their interpretation of what is happening in the situation so as to indirectly bring about situational changes . Zeichner et al. (1987) extended Lacey's framework by sub-dividing the last period into the successful and the unsuccessful 'Strategic Redefinition'.

Woods (1981) suggested a view that beginning teachers may be using the 'Pragmatic' or the 'Paradigmatic' strategy in coping with

professional situations in their first year of teaching. Pragmatic beginners combine partial redefinition with situational adjustment and the 'privatization' of educational problems; thus, they may survive and flourish within the system, 'carving a niche' for themselves. The paradigmatic beginner allows no compromise and becomes involved in the undisguised pursuit of 'how teaching ought to be' and thus frequently engages in open conflict with superiors, in public confrontations and in the end vanishes from the school setting. Woods regarded the 'transition shock' of first year teachers as the 'rite of passage experience' or 'baptism of fire in the classroom' and considered it as inevitable. Survival is embedded in the way which beginning teachers make sense of their own development.

Vonk (1983) summarized his studies of first year teachers by suggesting that they have to pass through two periods of role socialisation by the end of the year: first, the threshold period in the first five to six months during which they have to face the reality of the 'shock' experience when facing the class and the school situations; and second, the period of 'growing up' in the rest of the year in which they may start to try out some personal ways of dealing with pupils, peers and superiors.

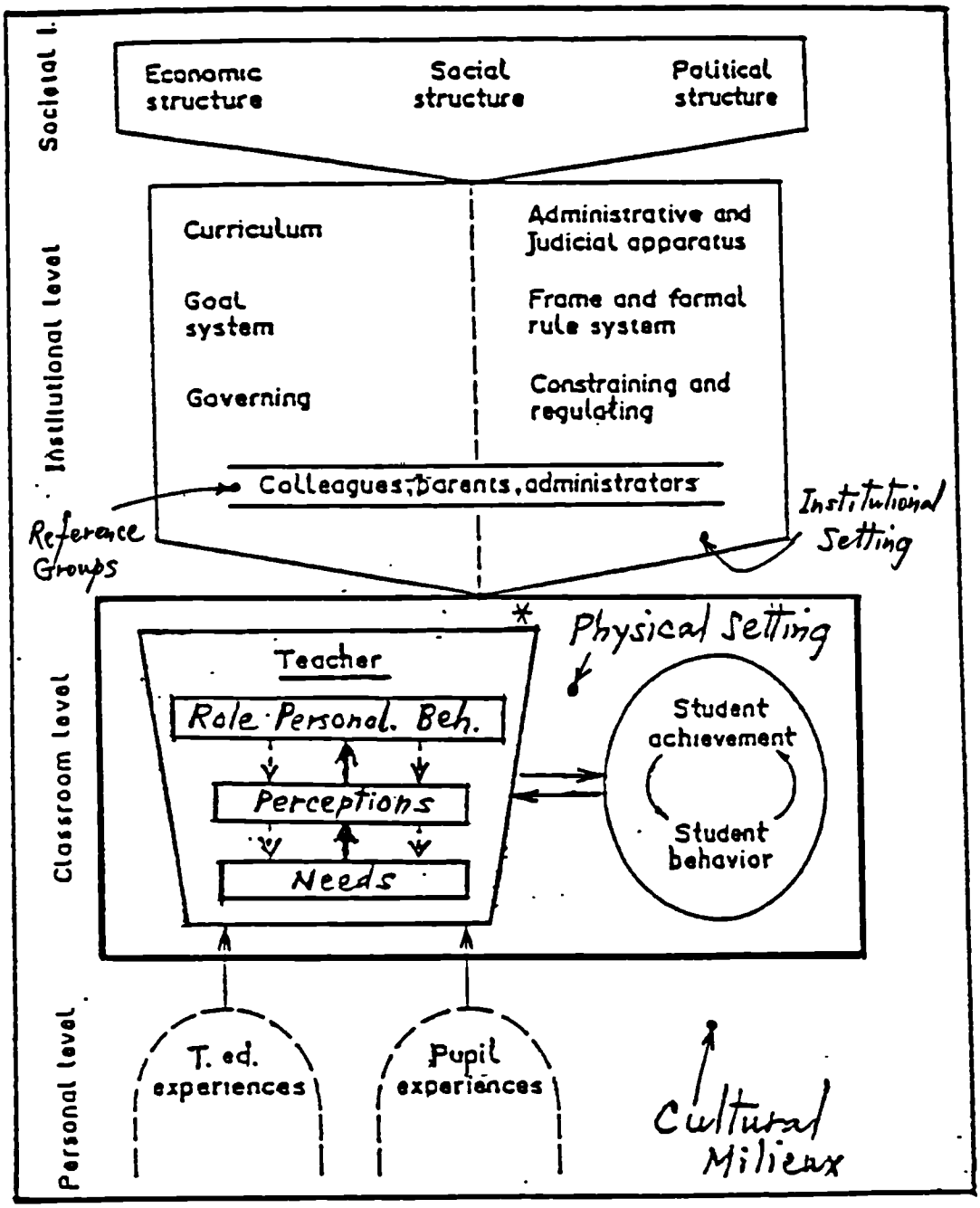
Jordell (1987) proposed a four-level model (ref. Fig. 3.1, p.51) showing structural and personal influences in the socialization of beginning teachers. It indicates that at the personal level, there are the factors of the teachers' own teacher education experiences and the influence of their own prior experiences in learning before teaching. At the classroom level, there are the interactive influences of the teacher and the

pupils: the teacher with his or her needs, perceptions and role personalizing behaviours and the pupils with their achievements and behaviours. This level is portrayed in details by Gehrke & Yamamoto (1978) in Fig. 3.2 (p. 52). Influences from colleagues, parents and administrators at the third, institutional, level represent the impact of the curriculum and the administrative and judicial apparatus. The highest level, the societal level, shows the impact of economic, the social, and the political structures which exert indirect yet long-term and tremendous influence on the teacher socialization process. He concluded that the main focus of the socialization of beginning teachers is on how teachers' practice-generated theories and their actual teaching practices are influenced. Research into how teachers develop certain modes of teaching and survival strategies at the classroom level is thus seen to be required.

In the above-mentioned six research reports, a framework of stage model is traced in the studies of Lacey (1977), Zeichner et al. (1987) and Vonk (1983); the other three are possibly included in the aleatory-change framework. Among them, Jordell's model is regarded as the most comprehensive one in all the teacher socialization studies reviewed and is taken into consideration for the formulation of a theory of first year beginning teacher research.

Recognising the need to understand and help the individuals without the constraints of an over-simplified stage theory, research on beginning teachers is needed which adopts the aleatory-change framework and takes account of socialisation. It is this thinking which lies behind the research in this thesis.

Fig. 3.1



Structural and personal influences in the socialization of beginning teachers

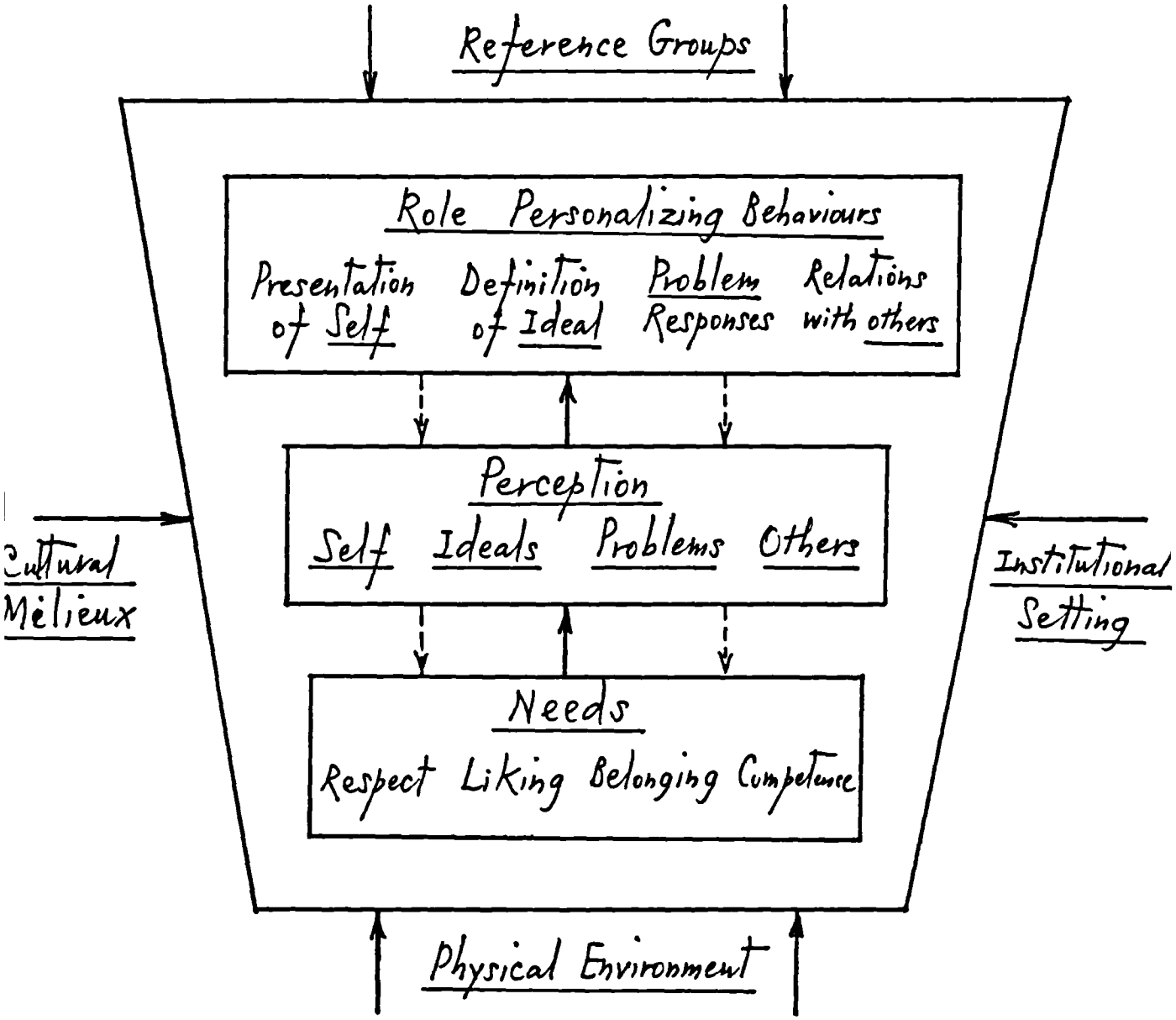
(Adapted from Jordell, 1987, Fig. 3, p. 167)

*: Ref. Fig. 3.2, p. (From Gehrke & Yamamoto, 1978)

Fig. 3.2

Model of Role Personalization Hierarchy of Beginning Teachers

(after Gehrke & Yamamoto, 1978)



Part II: Dealing with Beginning Teachers' Problems

Introduction

In order to gain further insight into beginning teachers' problems in their first year of teaching, it is essential to review reports of alternative pre-service education courses that have been initiated and developed, and how they are related to the problems of beginning teachers. This has been done in Section A. A similar review of reports of the induction of beginning teachers is presented in Section B.

A. Pre-service Teacher Education: A Re-examination

1. Recommendations for Reforms in Pre-service Teacher Education

Though it is not at all reasonable to put the entire blame for the problems of beginning teachers on inadequacies in pre-service teacher education (Veenman, 1984, p.167), it has been the intention of many educational researchers, especially teacher educators, to reform teacher education as a whole with reference to the new conceptions of teaching derived from educational research.

Bush (1987), after reviewing teacher education reforms over the last fifty years, summarized eight lessons for teacher education reformers. There have been,

a) no fundamental reforms in teacher education during the past fifty years;

b) few changes in how students are taught;

c) few changes in the teachers' workplace;

d) problems of diffusion of control and faulty design in teacher education;

e) insufficient resources to support teacher education;

f) substantial changes in inservice education;

g) needs for attention to the beginning years of teaching; and

h) problems caused by an inadequate knowledge base.

He suggested four promising lines of development of teacher education:

1) 'Codify and make widely available the best experience and practice that now exist in the schools.

2) '...towards more controlled and naturalistic experimentation...

3) 'Expand efforts to bring schools and institutions of higher education closer together.' and

4) 'Begin to use the technology of teaching ..., emphasizing both effectiveness and efficiency.' (Bush, 1987, p.17)

Wragg (1987), specifying a plan for the restructuring of initial teacher training in Britain, requested the teacher educators and policy-makers to consider four ways of improving standards:

a) a fresh round of recruitment to staff of training institutions;

b) some public funding for major curriculum development in teacher education;

c) partnership between schools and training institutions, and

d) a salary and career structure that will attract the best recruits.

Both Bush (1987) and Wragg (1987) saw the need to put more emphasis on the co-operation between schools and the teacher education institutions in solving beginning teachers' problems. Bush (1987) pointed out the need for attention to the beginning year of teaching, but he did not mention what had to be done; and Wragg (1987) did not clearly specify beginning teachers' problems nor their solutions but he proposed a concrete recommendation to improve salary and career structure in order to attract the best recruits. Judging from the rest of their recommendations, they emphasized the improvement of resources and public funding of teacher education, though they had not mentioned any fundamental changes in the teacher education curriculum nor any change in the

conceptions of teacher education in general.

As both Bush (1987) and Wragg (1987) did not base their work on empirical data obtained from beginning teachers, their studies had added little to an understanding of the complexity of the beginning teachers' problems and consequently their suggestions would be less convincing for the educational policy-makers or even to fellow teacher educators.

However, after conducting a questionnaire survey of 118 pre-service elementary students teachers' expectations on 33 teaching tasks devised with reference to Veenman's list of problems perceived by primary beginning teachers (ref. Table 3.1, p. 42), Weinstein (1988) concluded that the student teachers held a consistent and distinct 'unrealistic optimism' in believing that they would experience less difficulty than the average first year teachers after their graduation. She recommended that three things had to be done in pre-service teacher education to alleviate this optimistic bias and to prevent the 'reality shock':

1) teacher education courses had to be increased in length, rigor and selectivity;

2) teacher education had to 'eschew simple lists of "shoulds" and "recipes" for success'; and

3) student teachers had to be provided with opportunities for 'social comparison' so as to help them to recognize that they had similar experience during practice teaching and to encourage them to examine the relevance of these experience for teaching.

Weinstein further stated that

> 'If students believe that teaching is relatively easy and expect that they themselves will experience less

> difficulty, they will lack the motivation to become seriously engaged in teacher preparation (e.g. Lanier & Little, 1986)' (Weinstein, 1988, p. 39)

Judging from Weinstein's study, identifying beginning teachers' problems and finding ways to solve them would have serious implications for curriculum change in pre-service teacher education. But Weistein had not dealt with the more traumatic 'reality shock' experienced by the beginning teachers in their first year and thus recommendations suggested for its prevention would still be partial. A study to compare and contrast the differences in perceptions towards teaching between student teachers and first year beginning teachers would be a worthwhile topic for research.

2. Models for Pre-service Teacher Education

Though plans for reforms in teacher education may be situation-specific whether or not they arise from research, similar needs are strongly felt at different times and places (Beyer, 1986; Joyce, 1988). This suggests the search for a valid model may be useful.

Models for pre-service teacher education have been devised and intensively discussed. Zeichner (1983) discussed in depth four different paradigms of teacher education: a) behaviouristic, stressing specific and observable teaching skills, b) personalistic, focusing on the development of psychological maturity of the prospective teachers, c) traditional-craft, emphasizing the accumulated wisdom of experienced practitioners, and d) inquiry, stressing the issue of which education goals are to be given

priority, but not ignoring the technical skills needed to achieve their ends. Zeichner did not give his clear-cut preference for a model of teacher development nor did he relate the paradigms to actual teacher education programmes for comparison and contrast. But others have been interested in particular models.

Tom (1985), developing his ideas on inquiry-oriented teacher education models, provided a conceptual framework for teacher educators to select an appropriate mode of inquiry-oriented teacher education for implementation.

Gore (1987) presented a modified version of Cruickshank's (1985) Reflective Teaching Approach with a view to its being substituted for the traditional practice teaching experiences to the advantage of student teachers:

> 'Educationally, preservice teachers can be better prepared for school-based experiences and for continuing professional growth;
> Practically, the approach is efficient and cheap; and
> Ideologically,it has the potential to create the awareness central to any restructuring of education system in line with a critical perspective' (p. 37)

As an alternative to and a supplement for a "traditional" teacher training mode of 'set lectures and the tutor-dominated seminars' (HMI, 1981, p.12), Harber & Meighan (1986) suggested the 'Democratic Learning Cooperative Model' where 'students as a group ... decide what and how they should learn' (p. 274). This applied only to the 'methods' part of the PGCE course at Birmingham University's Faculty of Education' which lasted for several weeks in the course of two terms. The student teachers could write their own syllabus, select their teaching materials, share the tasks of teaching and organize course sessions, locate

appropriate resources and evaluate the outcomes. The tutors were participant observers who monitored the evolution and development of the course only. As a result, Harber & Meighan (1986) claimed that the students could gain considerable confidence for the subsequent main teaching practice.

The main message delivered in the above-mentioned three studies seems to be advocacy of the increase of student teachers' awareness of the situations encountered, and of their reflective thinking abilities in application of theory into practice during practical teaching, in the hope of better preparing themselves for the 'reality shock' of beginning teaching. However, as stated in Section A Part I, the traumatic experience of beginning teaching is of far greater intensity and duration than the teaching practice, which is a much 'tuned-down' trial of what is actually required of a full-time teacher. It is doubtful that beginning teachers' perceived problems can be solved by simply focusing on the ways of minimizing anxiety or increasing confidence during teaching practice. A broader perspective on the transition from a student teacher to a beginning teacher would have to be the concern of future research.

McQualter (1985) developed from personal construct theory (Kelly, 1955) a working procedure to help student teachers to explore their own mental worlds, to show them the variety of decisions to be made when teaching and guide them in the transformation from tertiary students to teachers. It provides the means for students and supervisors to discuss and examine all aspects of teaching in a counselling situation. Though McQualter

broadened the scope to be covered by student teachers in their training through a reconstruing of their personal construct systems on teaching, again, the simulated experience gained in their teacher education programmes would only be a pale reflection of the real situations they will encounter in the first year of teaching, and more disastrous 'shock' would occur if they had established a 'false perception of control' of the situations anticipated in future teaching (ref. Weinstein, 1988 & p. 23).

Lawton (in Graves, 1990), after examining political, educational and demographic trends in the United Kingdom, concluded that these trends are taking teacher education in a direction of fundamental change so as to produce a more stratified teaching force. His proposals for teacher education did not separate preservice from in-service in a sharp way. He proposed a three-stage view of teacher education: a shorter, more intensive and competence-oriented initial teacher education; an induction/probation stage with an emphasis upon reflection on practice; and a third stage that would focus upon professional concerns, covering possibly more intensive and extensive work in the areas of philosophy, psychology and sociology.

There is still much room for investigation into what components need to be incorporated into an 'intensive' course of initial teacher education and also how to be more competence-oriented, yet without 'going to the extremes of some American courses' (ref. Lawton in Graves, 1991, p.151). Research on the problems encountered by the beginning teachers would have to be part of the extensive investigation on the professional development of teachers but this would be best evaluated in the context

of a model of continuing professional development from pre-service teacher education through novice experience towards becoming an expert teacher. Research on the problems encountered by beginning teachers would feed into such a programme and a key theme would be understanding and promoting the process of learning to teach.

B. Induction for Beginning Teachers

As possible causes of traumatic experience in the beginning year of teaching might have been due to the inadequacies in pre-service teacher education programmes (ref. Section A Part I & Section A Part II), some researchers have designed induction courses for beginning teachers, with the aim of making up for the deficiencies in their previous teacher education studies.

Fox and Singletary (1986) in a paper based on their 'own experiences in the development and implementation of seminars for student teachers' (p. 13), proposed that a comprehensive induction programme should

1) develop attitudes that will aid in self evaluation and reflection so as to improve beginning teachers' awareness and to facilitate their learning;

2) provide new teachers with skills that will assist them in developing methods for problem solving and transfer the theories learnt in pre-service teacher education courses to appropriate teaching practices, narrowing the gap between theory and practice as well as minimizing the 'shock' effects;

3) provide a support system, especially from their peers, for beginning teachers during the crucial period of adaptation;

4) include activities that allow beginning teachers to define their own style in management to minimize their anxiety in class control;

5) provide each of the beginning teachers with a mentor to help them learn in teaching practice and as a source of other professional advice; and

6) organize regular meetings for beginning teachers with their peers in similar situations and with similar problems to exchange views and gain professional and psychological support.

It seems that Fox and Singletary have assumed, or even prescribed the needs of the beginning teachers from the viewpoints of experienced teachers or teacher educators. This may create a circle game for the teacher educators since the problems to be 'solved' are those perceived by the 'suppliers' of the solutions but possibly are not those perceived by the recipients. Empirical studies exploring beginning teachers' needs and preferences for induction are thus required before suggesting alternatives for induction programmes.

McCahon et al. (1987), after conducting two empirical studies on Australian first year teachers' problems and their initial reactions to an induction programme, had detected that beginning teachers encountered 'reality shock' at about ten weeks' teaching and were particularly troubled by problems of classroom management and maintaining student attention. They developed a set of recommendations for the improvement of induction programme for first year teachers. The main points include:

a) 'that induction should be seen as an integral part of teachers' professional development' for all beginning teachers (McC n et al., 1987, p. 33);

b) that new teachers should be allowed to teach a reduced time-table during their first year;

c) that the induction programme be devised with reference to the practical situations they encounter in classrooms and school;

d) that an induction co-ordinator be appointed to coordinate the programme;

e) that the induction sessions should be part of the new teachers' time-table throughout the year; and

f) that a familiarization programme of the school and the community be included.

Vonk et al. (1987), after the longitudinal study of beginning teachers in their first four years referred to earlier, recommended that an effective INSET (Inservice Education and Training) which aimed at the support of professional development of beginning teachers had to meet four criteria:

a) the course must be a combination of theory and practical teaching;

b) the learning activities during the course are to be followed up by a form of coaching after the course;

c) the course issues must be connected directly with problems or needs experienced by the teachers; and

d) the course must yield either practical rules or result in the development of usable materials for teachers' daily practice.

Goodman (1987), based on a preliminary study of selected novices, also recommended that for each beginning teacher, a school based "colleague" or peer teacher should be assigned, preferably teaching at the same grade level as the beginning teacher. The designated "colleague" may also have to provide school resources, to listen to his/her concerns, make suggestions

and be a model for the beginning teacher. Furthermore, release time should be made available to the beginning teacher for curriculum planning and preparations.

The work of McCahon et al. (1987), Vonk et al. (1987) and Goodman (1987) which were all empirical studies, had provided quite similar suggestions for the improvement of induction programmes for beginning teachers. But they seemed to be catering basically only for the short-term needs of beginning teachers in overcoming or lessening the traumatic influences from the 'reality shock' within the first year or rather within the first few months. More would have to be done to facilitate beginning teachers' professional growth and an induction programme should be designed with reference to their general process of learning to teach which is a process developing from their pre-service years through their first year of teaching and beyond. Furthermore, to facilitate the success in an induction programme, policy makers and administrators should have to be sufficiently convinced of its real necessity for beginning teachers not only for their immediate needs but for their healthy development in professional maturity. Otherwise there would not be sufficient justification for them to allocate fund, manpower and time to implement it. So, more intensive (and even extensive) studies are required at present to convince persons in authority that there exists a grave need to plan and execute plans in induction for beginning teachers.

In view of the needs for induction programmes, and the apparent lack of adequate evaluative studies (Tisher, 1982), Griffin

(1985) suggested the following research issues for teacher induction studies:

a) to determine extent to which research findings when used as the content for induction programmes, accomplish the same outcomes as are reported in the original studies;

b) to find out from a variety of perspectives whether teacher induction programmes contribute to or hinder new teachers' estimations of their efficacy and their actual efficiency at work;

c) to discover the extent to which teacher induction programmes serve as a screening process, sorting more effective teachers in schools and ensuing less effective teachers out of teaching altogether

d) to determine whether the procedures and practices associated with the induction programme are valid and reliable; and

e) to identify the ways in which induction programmes align with conceptions of excellence in teaching.

What Griffin (1985) suggested ha to be taken seriously by researchers before implementing any induction programmes which aim not only at very short-term adaptation to the immediate working environments of the new teachers, but also their long-term development into competent expert teachers in the years to come. Basic assumptions of induction programmes, their effectiveness and their relevance to conceptions of effective teaching are to be critically evaluated before their organization and execution.

Bullough (1987), after an intensive study of a life history of one first year teacher, concluded that some fundamental changes in pre-service teacher education programmes and in school struc-

ture and relations were called for. Teacher education programmes should be expanded to include instruction in the skills necessary for institutional survival. Greater attention should be paid also to the pre-service teachers' values as they play a vital role in the teachers' socialization process. He further recommended that, structurally, teacher education should be extended into the first year of teaching by 'providing opportunity for beginning teachers to reflect on their practice in a collegial but professional environment'(p.234).

There is however very little linkage between teacher induction programmes for beginning teachers and pre-service teacher education courses for student teachers. Research on the programmes bridging the gap of transition between student teachers and beginning teachers is yet to be more extensively developed (Houston et al., 1979; Varah et al., 1986).

Cooke et al. (1990) conducted the 'first systematic investigation of beginning teachers and of induction provision in Hong Kong'(1990, p.67) by examining the problems of Hong Kong beginning teachers in their first year through an ex post facto study. A guideline for organizing school-based induction programmes was published for local schools to cater for various needs of beginning teachers (Cooke & Pang, 1990). Though further studies have been promised, it is not yet clear, to the best of my knowledge, whether these Hong Kong researchers have considered the need for a theoretical study of the integrated process of transition from student teaching to beginning teaching. This need was strongly emphasized in previous paragraphs and in some studies (e.g. Bul-

lough, 1987).

Review of studies on induction in this section has added little to the conclusions on p. 60-61 as to the need of developing a model of continuing professional development except to emphasise the importance of looking at the question of traumatic experience within the first year of teaching.

At this point it seems that there is a need to look within the general review for possible hints and suggestions from some models for change in teacher development in order to formulate in the next chapter a theory for the study of the process of learning to teach with respect to beginning teachers.

CHAPTER FOUR

DEVELOPING A THEORETICAL MODEL ON THE PROCESS OF LEARNING TO TEACH

Introduction

In order to build a theoretical framework for the present research on the development of beginning teachers, previous models of teacher development are reported and reviewed in Section A.

Furthermore, a review of recent relevant studies of learning in Section B also provides a basis for the formulation of a theory of the process of learning to teach.

The background and the characteristics of the Model on the Process of Learning to Teach formulated are described in Section C. Section D presents a set of postulated changes in beginning teachers' perceived competence in teaching in their first year according to this model.

A. Models of Teacher Development

As an initial attempt to summarize the general search for a theoretical framework for further research in teacher development, the two frameworks suggested by Pickle (1985) and Zahorik (1986) are combined with some personal modifications.

Pickle (1985) (ref. Fig. 4.1 (b), p.72) proposed a developmental view of teacher professionalism and socialization. Regarding the growth and the maturity of teachers, three dimensions were suggested: professional, personal and process. The professional dimension includes a professional knowledge base, service ideal and affective neutrality, that is, working with clients objectively without emotional involvement; the personal dimension includes a self- and other-understanding, a quest for need-achievement and a personal style; the process dimension includes thinking abstractly, that is, a quest for concepts and generalizations, thinking critically and forming a perspective of teaching in the broadest possible context. The basic assumption is that maturity and expertise are gained over an extended period of time in one's professional life from a novice teacher to an experienced teacher through positive developments in aspects of the three dimensions.

Zahorik (1986) identified three conceptual categories for good teaching:(I) science-research skills, deriving from research findings of the process-product, correlational studies; (II) theory-philosophy skills, deriving from theoretical and philosophical models of good teaching; and (III) art-craft skills,

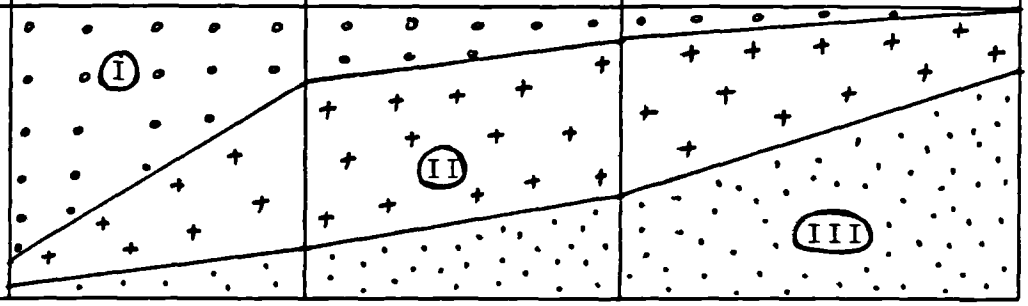
principally deduced from views that regard teaching as invention and personalization. Referring to the needs of teachers and their developmental stages of growth, Zahorik (1986) proposed a model of 'Developmental Perspective to Teaching Skills' describing the transitional changes of different emphases on the three conceptual categories from a student teacher to an experienced teacher (ref. Fig. 4.1 (a), p.72 & Keys I, II, III).

Two models are seen as complementary and mutually reinforcing, and a joint model on the aspects of development of teachers is produced with an addition of the items of teacher education mode and professional maturity at the lower part of the figure (ref. Fig. 4.1, p.72). The teacher education mode added indicates the reality of formal professional development and its possible aspects to be incorporated at different periods in their teacher education. These can thus be directly referred to in the model. Professional maturity is added to summarize the general trend of positive development in professional expertise from novices to experts in teaching with reference to all aspects. And, of course others listed in the table. The dimensions are not exhaustive.

Fig. 4.1

A JOINT MODEL OF ASPECTS OF THE DEVELOPMENT OF TEACHERS[1]

(a) Zahorik's Model:

	student teachers	developing teachers	experienced teachers
Professional Dimension [2]			

(b) Pickle's Model with additions :

	beginning teachers		experienced teachers
Personal Dimension	survival →		self/other understanding
	imitation →		personal style
Process Dimension	concrete →		abstract/ critical/ perspective
Teacher Education Mode[3]	pre-service	inservice	
Professional Maturity[4]	low →		high

(1) Adapted from theoretical framework of Pickle (1985) and that of Zahorik's (1986) with personal modifications.

Keys: I : Science - Research skills: presenting, checking, questioning, etc.

II : Theory - Philosophy skills: interpretation, consistent application.

III : Art - Craft skills: observation, reflection, creation.

(2): term borrowed from Pickle (1986)

(3),(4) : personal additions by researcher

B. Recent Studies of Learning

Recent studies of learning have stimulated a renewal of interest in research in teaching and learning to teach; important ideas of concern for the present studies are the learner's search for personal meaning in learning, the characteristics of novices and experts and findings in the role of metacognition in learning. These ideas are to be further discussed in detail in the following sections.

1. The nature of the learning process

Entwistle (1985) presented a model of student learning incorporating major previous studies with the intention of aiding teachers in their thinking about their classroom experience. Referring to work such as those of Marton et al. (1984) and Pask (1976), he emphasised how the learner is constantly searching for personal meaning in what he or she is supposed to learn. Variations in the 'intentionality' of learning thus becomes the crucial point in understanding the process and the outcomes of learning.

Further work on the study of different levels of understanding is reported by Biggs and Collins (1982) through the SOLO taxonomy (Structure of the Observed Learning Outcomes) which can be linked to the study of human thinking in cognitive psychology.

Calderhead (1988) summarized several recurring themes and issues concerning teachers' professional learning:

a) the qualitative difference between teachers' practical

knowledge and systematic academic knowledge,

b) the debate on the importance of theory or practice in the curriculum emphasis of teacher education courses,

c) the impact of field experience on the process of learning to teach in the pre-service teacher education,

d) the importance of the process of reflection both for the understanding of teachers and their teaching; and in the preparation of teachers,

e) the influence of teacher education courses on the formation of a professional learning process, and

f) the role of a sense of empowerment in teachers' professional education.

Borko (ref. Eisenhart & Borko, 1991), reviewing the literature on cognitive psychological studies of teaching and learning, wrote that the learning of the students occurs

> 'as they make sense of instructional events by using their existing cognitive structure to interpret environmental stimuli' and it also occurs
> 'as they modify and elaborate their knowledge structures through a process of adaptation to the environment.'
> (p. 142)

The key to success in learning is a process of metacognition, the 'making sense of events'.

Two points of note can be drawn from this review:

a) the same process of learning is also applicable to the teachers, especially the beginners, in their own learning process during and after lessons and in schools and

b) it requires the teachers to be aware of their students'

processes in learning if real learning is expected.

Wang et al. (1990) reported in a comprehensive meta-review and synthesis of research on variables related to learning, that the variables identified as the 'most important to good learning outcomes' are student metacognition, effective classroom management, quality of instruction, positive and productive student/teacher interactions, a classroom climate conducive to learning and a peer culture supportive of academic achievement.

Of all the above-mentioned variables for good learning, the most important one is Student Metacognition but as indicated by Borko (Eisenhart & Borko, 1991), it is not readily and immediately grasped by beginning teachers with a limited teaching experience of a few months or even a few years.

2. Novices and experts

Shulman (1987) suggested that to be successful in promoting learning, the cognitive skills of 'pedagogical reasoning', that is, the identification and selection of strategies for representing key ideas in learning and the adaptation of these strategies to the characteristics of the learners, are unique to the teaching profession. But, such skills are relatively undeveloped in novice teachers (Borko & Livingston, 1989).

Studies of the comparisons of cognitive performances of experts and novices show that the knowledge structures of experts in a certain domain are qualitatively different from those of novices: such as, having a large and well-organized knowledge

base in the domain, categorizing problems by means of laws and principles, recognizing patterns with 'intuitive' short-cuts based on 'fuzzy sets' cumulated through experiences in similar patterns and network structures (Dunn & Taylor, 1990, p.14).

Some studies (e.g. Eisenhart & Borko, 1991) conclude that since novices lack the knowledge and skills to develop structures like experts, it is undesirable to educate novices by

> 'presenting them with information about how experts think and act and ask them to adopt those routines or actions. Instead, we should structure and sequence activities such that task demands are appropriate to the novices' level of readiness' (Eisenhart & Borko, 1991, p. 143).

Other researchers (e.g. Dunn & Taylor, 1990; Morine-Dershimer, 1990) recommend possible ways to develop novices into experts. Through the use of 'advice-strategies' derived from hierarchical analyses of expertise, a learner is encouraged to

> 'look for relationships/patterns to facilitate development of conceptual knowledge or higher-level rules that may be used in subsequent problem-solving' (Dunn & Taylor, 1990, p. 14);

or through

> 'a procedure that would give novice teachers systematic information about pupils' interpretations of teacher directions and lesson content,... their attentiveness during lessons and their tendencies to engage in self-regulated learning...' (Morine-Dershimer, 1990, p.166).

There seem to be differences in opinion concerning learning through experience and learning through "telling" in the above-mentioned views ; but, all would agree that to become an expert in any domain of knowledge or skill, takes a considerable period of time.

C. Towards a model of professional learning and development

Though models of teacher development and relevant recent studies of learning are reviewed previously in Sections A and B, the nature of 'transition' in the process of development in learning and learning to teach is still not sufficiently dealt with; more elaborations and reviews along this line of search are presented in the following sections.

1. Background

Parker and Lewis (1981), after conducting research on the problems of promotion in the Hotel and Catering Industry in the U.K., introduced a 'Seven Phase Model of Stages accompanying Transition' taken from Adams et al. (1976) to illustrate the dynamics of change in competence when a person is being promoted from a lower level to a higher level in a job. They stated that

> '... after substantial investment in individuals through training and development, many organizations create a "sink or swim" philosophy at the point of transition. There are casualties because of this, both in terms of individuals taking too long to reach competence and those who fail to adapt to the new situation.'
>
> (Parker & Lewis,p. 18)

As Adams et al. (1976) postulated, a person would be involved in a life transition when encountering a significant life event, such as divorce, death of spouse, retirement, marriage, change of occupation, promotion and so on. A transition cycle of adaptation to the impact of these events has been generalised through empirical findings in developmental psychology (Sugarman, 1986).

In the modified 'Seven Phase Model of Stages accompanying Transition' (Sugarman, 1986, p. 142; adapted from Hopson, 1981; also ref. Fig. 4.2, p. 80), when a person encounters a life event, he/she would be in stage 1, immobilization, a state of bewilderment or shock. Trying to react in stage 2, would be a state of recovery / control if there were a positive transition, but a state of minimization or retreat if there were a negative transition. Further on, self-doubt in stage 3, begins with a state of anxiety, anger and sadness. In 'Letting go' stage (stage 4), positive change would be willingness to experiment in the new situations, but negative change, would be sticking to the old state of mind and refusing to accept the new changes. The 'Testing' stage (stage 5), is characterised by confidence to experiment in new situations; while the 'Searching for meaning' stage (stage 6), shows more reflection in the situations encountered; and finally, in the 'Integration' stage (stage 7), there is a feeling that the transition is over with full control of present situations again.

Encountering a desired event, a normal person would experience the stages 1, 2a, 2b, 3, 4, 5, 6 and 7. For an encounter of a negative event, three possible sets of stages would be experienced:

(1) for a person with a positive attitude and good mental adaptivity, he or she would go through stages 1, 2a', 2b', 3, 4, 5, 6 and 7 reaching a more advantageous state in his/her 'assumptive world' (Parkes, 1971), the largely taken-for-granted assumptions he/she makes about himself/herself and his/her world;

(2) for a person with a normal personality but without

sufficient stimulus for conscious search for meaning, he/she may stop at Stage 5 and remain complacent at a state more or less the same as before, as if nothing has happened; and

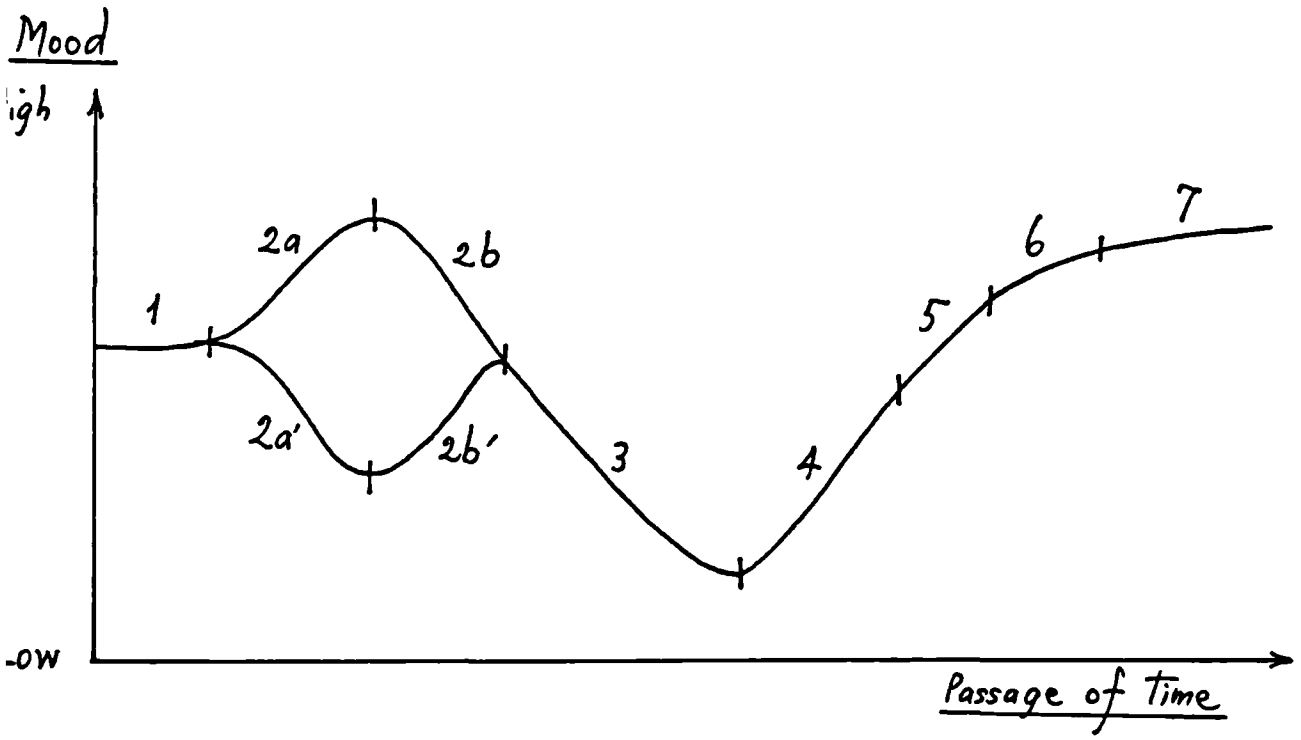
(3) for a person whose negative reactions 2a' & 2b' are strong and self-doubt is deep, who take things too seriously, he/she may slip to the bottom of the 'trough', never recovering the former state in his/her assumptive world.

Advancement through stages is seldom smooth and continuous.

The level/stage experienced and/or the time required varies from person to person and from event to event.

Fig. 4.2 Seven-Phase Model of Stages Accompanying Transition

(from Sugarman, 1986, p. 142 adapted from Hopson, 1981)



Key:

1. Immobilization
2. Reaction
   a. Elation a'. Despair
   b, b' Minimization
3. Self-doubt
4. Letting go
5. Testing
6. Search for meaning
7. Integration

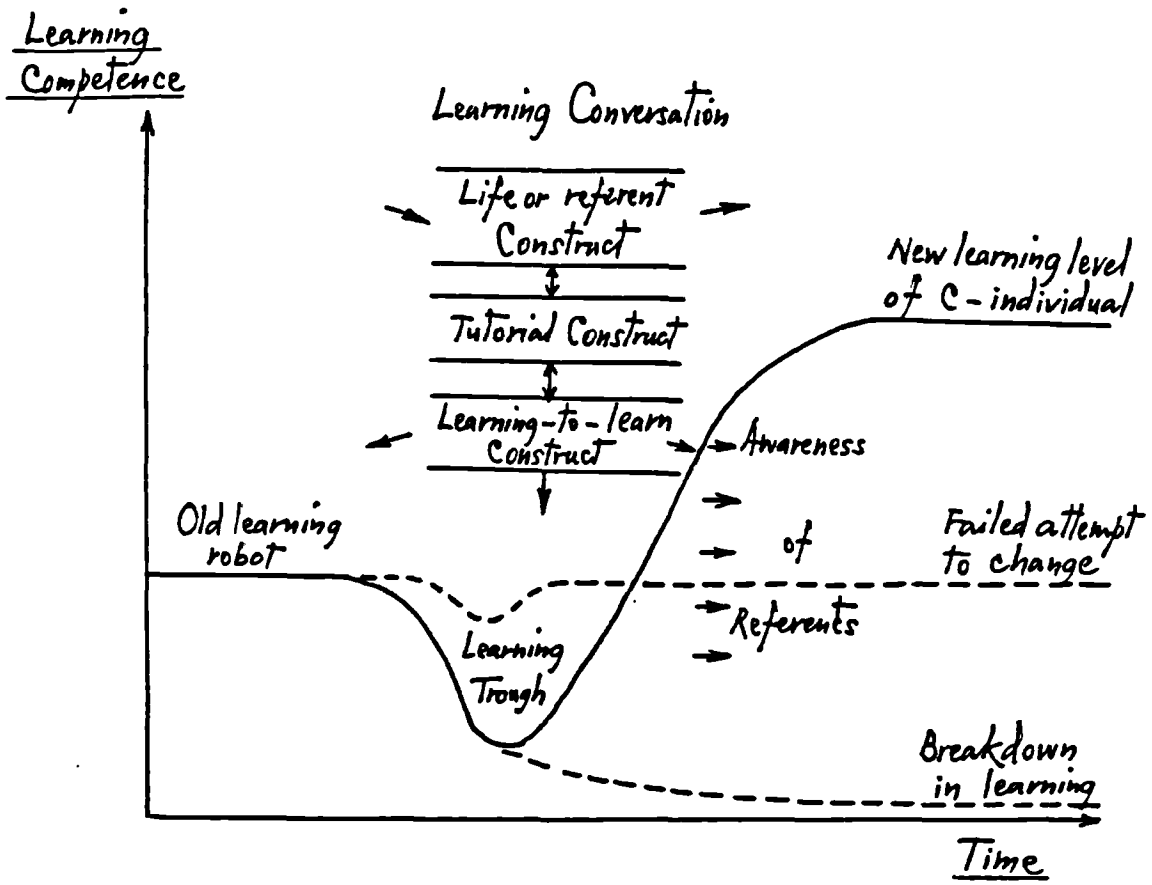
Harri-Augstein (1985) developed a model on the Learning-to-learn Process which is strikingly similar to the Seven Phase Model mentioned above (ref. Fig. 4.3, p.82). The major theory underlying it is the 'Conversational Theory' or the 'Conversational Science Paradigm' (Thomas & Harri-Augstein, 1985), a theory with a similar name to Pask's 'Conversation Theory' (1976). The former has been developed from the Personal Construct Psychology originated by George Kelly (1955) and with a close link with the developmental aspects of the person while the latter has been more closely linked to the theory of information processing models of cognitive science. It has been anticipated that the former model might have a higher potential to be further developed, through more empirical studies, to understand more about the Process of Learning-to-learn.

The most interesting aspect of the similarities is the occurrence of the 'trough', the lowest part of the curve in mood (Fig. 4.2, p.80) or competence (Parker & Lewis, 1981, Fig. 1, p. 18), and the 'learning trough' in Harri-Augstein's curve of learning-to-learn (Fig. 4.3, p.82). These drops in competence or mood or even perceptions of competence would be a possible analogy for the 'reality shock' (Veenman, 1984) in the studies of beginning teachers especially in their first encounters with the actual classroom teaching situations as full-time teachers after graduation from the teacher education courses. Similarly, for the process of learning to teach, it is postulated that there would exist a very close relationship with the learning-to-learn process because they both are describing some rhythm in learning;

alaetory changes in the process of learning (either to teach or to learn) would most likely to trigger off changes as described in the 'seven-phase transition model'. So, it is assumed to be promising to develop a model on the process of learning to teach by taking into consideration the general models of transition (Fig. 4.1, 4.2 & 4.3).

Fig. 4.3 Learning-to-learn Process

(From Harri-Augstein in Bannister, 1985, p. 63)



2. The model developed for the present research

Referring to the models of Jordell's (1987) and Gehrke's & Yamamoto's (1978) (ref. Fig. 3.1, p.51 & Fig. 3.2, p.52) on the socialization of beginning teachers, it has been proposed to focus the scope of the present study upon the sub-model on the teachers' thought and action process at the classroom level and the personal level. At the classroom level, impact upon the teachers has been principally elicited from their perceptions in context. A process of learning to teach is postulated to be illuminated by the teachers' reports on their observations, decision-making rationale and personal feelings towards the events and people encountered. The classroom is the immediate setting in which the majority of events related to the process of learning to teach are expected to occur. Going one level deeper to the personal level, a teacher is responsible for managing his/her own learning through his/her encounter with the workplace situations.

Based on the ideas of the models on the socialisation of beginning teachers, the theories of encountering significant life events, and the model of learning-to-learn, a three-phase developmental model, a model on the process of learning to teach, is formulated to describe the changes in perceived teaching competence of beginning teachers during their process of development. This model may be tested using data on the characteristics of changes from a student-teacher to a beginning teacher.

In this model the process of learning to teach proceeds in three phases

Covering the transition of a novice teacher from after his/her initial contacts with classroom teaching during teaching practice to the end of his/her first year of full-time teaching. They are:

1) the Familiarization Phase,

2) the Adjustment Phase, and

3) the Stabilization Phase.

Within each phase, the characteristics of the changes in perceived competence in teaching of the beginning teachers are described with the interplay patterns of the five psychological states included in the model. These states are formulated with reference to the models, especially Jordell's (1987 & Fig. 3.1, p. 51) and Sugarman's (1986 & Fig. 4.2, p. 80), reviewed in previous sections of this chapter. They are:

1) the Perplexity State,

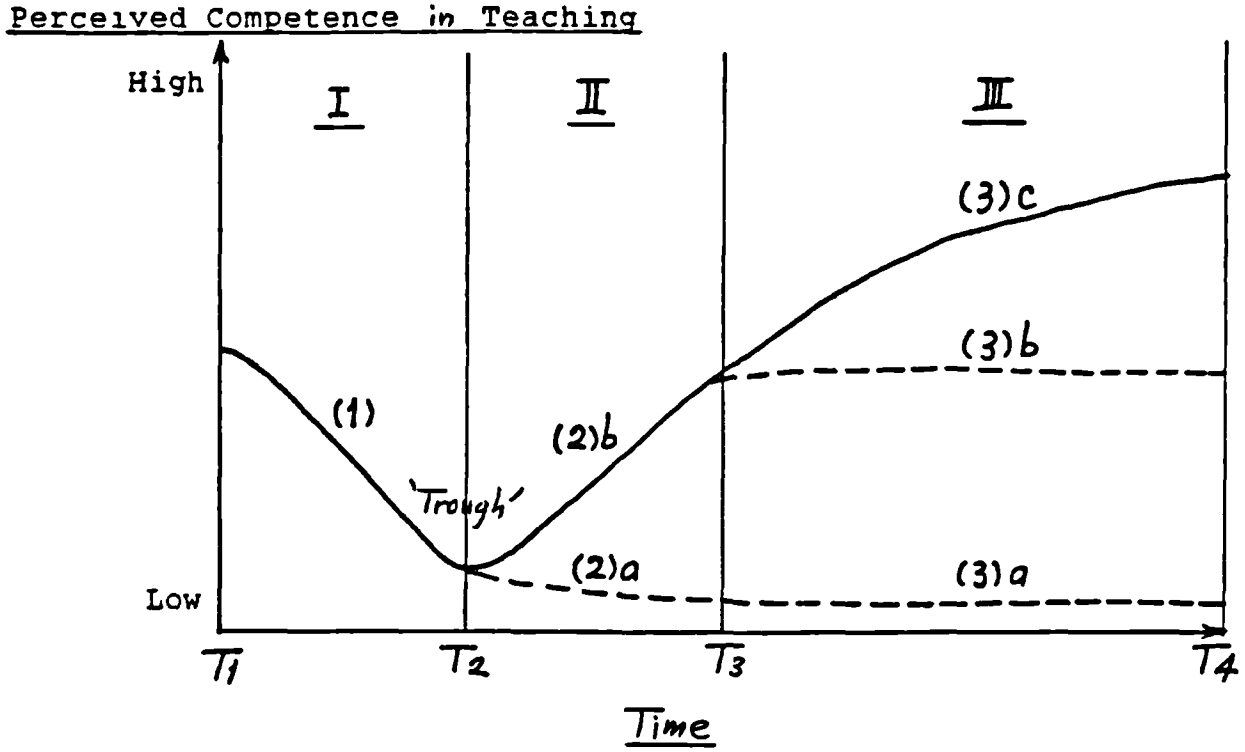
2) the Control Anxiety State,

3) the Experimentation State,

4) the Reflection State, and

5) the Integration State.

Fig. 4.4 Model on the Process of Learning to Teach
(proposed specifically for this research)



Key:

I Familiarisation Phase
II Adjustment Phase
III Stabilisation Phase
T_1 End of Teacher Education Course
T_2 The First Few Months
T_3 Half of the Year
T_4 End of the Year
(1) 'Landslide' period
(2)a 'Down-hill' period
(2)b 'Up-hill' period
(3)a 'Lowland' period
(3)b 'Plateau' period
(3)c 'Mountaineering' period

In the Perplexity State, a beginning teacher is hypothesised to be generally overwhelmed by a new teaching situation that he/she has not been expecting. a sense of shock and challenge has forced him/her to re-orientate his/her attitudes towards teaching in the classroom.

In the Control Anxiety State, a beginning teacher tries hard to maintain a minimum level of survival in the classrooms and in school. Much attention is paid to discipline control, teaching targets set by the school and the subject panels. A sense of 'swim or sink' is strongly felt. Help from others is fragmentary or is being deliberately rejected for fear of being taken as a sign of incompetence. Methods of other more experienced colleagues are imitated frequently without much modification.

In the Experimentation State, the beginning teacher begins to gain confidence in school work as more experience has been gained in the previous months. He/she is prepared to experiment with personal ideas in the classroom and in school. Effective methods practised by other colleagues are modified according to specific needs of different classes. Though mistakes are inevitable, he/she is willing to test and to acquire new techniques in gaining better control of the teaching situation. Beginning teachers also experience a widening scope of professional roles in this State.

In the Reflection State, the beginning teacher searches for meaning in his/her work in specific settings. He/She begins to reflect more deeply on the theoretical bases for practical teaching. Personal style in teaching in gradually developed with a realization of personal belief in education. Individual pupils'

needs and interests are more valued than simply the fulfilment of present targets set by the subject panels or by the syllabuses.

In the **Integration State**, the beginning teacher feels that the transition period is over. He/She is now in full control of his/her teaching and the relations with colleagues and school administrators. Previous experiences and knowledge in teaching and personal aspirations in education are possibly integrated as a whole forming a personal style in teaching. Self-esteem is high and securely sustained throughout his/her life in school. Individual pupils' needs and interests are catered for as far as possible.

The first two states, Perplexity State and Control Anxiety State are also termed **Survival States** since beginning teachers are by definition principally concerned with their survival in the classroom. The other three states are grouped together and named as the **Growth States** because the characteristics in these states, by definition, are contributive to the growth of first year beginning teachers in their perceived competence in teaching. The dominance of a state in either of these two state groups would possibly reveal the dominance of a focus either on survival or growth in beginning teachers' perception of teaching at a certain point in time.

The total aggregate of the five states would contribute to a picture revealing the general level of perceived competence in teaching at a certain point in time and thus a pattern of change in perceived competence in teaching could possibly be plotted for a series of time points.

D. Postulated Changes in beginning teachers in their first year of teaching according to the Model

In each of the following sections, the statements are hypotheses operated from the model on the process of learning to teach postulated in the present research.

1. At the end of a pre-service teacher education course

The student-teachers who are graduates-to-be, would be assumed to be generally confident and be ready to take up teaching posts with a more positive attitude as their perceptions of teaching is coloured with the tint of the teacher education courses and with a limited exposure to the real situations of the classrooms and schools in the form of the two or three six- or seven-week teaching practice blocks throughout their pre-service training. It is postulated that, as a group, the graduating student teachers would be sufficiently confident to prepare for their entry into the teaching posts in the primary or junior secondary classes in early September after a summer vacation period of two months. Their level of perceived competence in teaching would show a preference for a state of growth than that of for survival. (cf. the 'Fantasy Stage' of Ryan (1986) & p. 47; ref. T1 in Fig. 4.4, p. 85).

2. The Familiarization Phase: the first few months

Beginning teachers entering the teaching environment would be immediately confronted by various aspects of real school and classroom situations. The frequently used term 'Reality Shock' would describe the beginning teachers' obvious doubt about their competence in teaching as they would be busily struggling for survival in classrooms and in schools. There would be detected a considerable change in their perceived competence from that of a preference for growth to that of survival together with a sense of 'bewilderment' and anxiety about control in their own work and in teaching in the classroom. Time for reflection in the process of familiarization is not sufficient as they have a work load comparable to that of all other colleagues who are more experienced. A general decline in their perception of teaching competence is possibly detectable. (cf. the 'Threshold Period' of Vonk's (1983), the 'Phase of Survival Concerns' of Fuller (1969), the 'Survival Stage' of Ryan (1986) & the 'Internalized Adjustment Period' of Lacey (1977) and ref. p. 48).

3. The Adjustment Phase: between two or three months to mid-year

By the third month, beginning teachers would have been more familiar with the working environments in the classrooms and in the schools; less non-teaching workload like registration, form filling, filing and other school administrative duties would be required as most of them have been completed in the first two

months. Things of immediate concern are teaching tasks in different classes.

From the 'trough' (ref. T2 in Fig. 4.4, p.85), some beginning teachers would gradually begin to regain their confidence and recover from the 'reality shock' of the previous months. Though they might still be cautious and anxious about the problems of control in class discipline, they might, as well, start to explore and experiment in various ways to improve their classroom management skills and to strengthen their teaching strategies (ref. 2(b) in Fig. 4.4, p. 85).

Some beginning teachers, however, so overwhelmed by the traumatic experiences of the first two months, might have lost confidence in their competence in teaching and prefer to stick to their immediate mode of working without apparent change in their level of perceived competence of teaching. They would still carry out their duties but without much satisfaction or sense of achievement in work (ref. 2(a) in Fig. 4.4, p. 85).

Some beginning teachers, probably a small minority, might even move further downward with a general level of perceived competence distinctly lower than at the 'trough', a sign of possible early burnout or even dropout.

4. The Stabilization Phase: the latter half of the first year

Generally, beginning teachers of average personalities and skills might be able to change after five to six months of initial full-time teaching to concentrate more on their teaching by

testing their personal conceptions by trial and error and thus accumulating successful experiences. (cf. the 'Growing-up Period' of Vonk (1983), the 'Phase of Teaching Situation Concerns' of Fuller (1969), the 'Mastery Stage' of Ryan (1986) and the 'Strategic Compliance Period' of Lacey (1977) and ref. p. 48)

Beginning teachers who are more concerned with further improvement, would begin to reflect on teaching practices and thus develop a more meaningful mode of learning-to-teach. (cf. the 'Impact Stage' of Ryan (1986), the 'Phase of Concerns about Pupils' Needs' of Fuller (1969) and the 'Strategic Redefinition Period' of Lacey (1977) & ref. (3)c in Fig. 4.4, p. 85).

Average beginning teachers who are satisfied with their own mode of teaching after testing their personal conceptions with success would probably be complacent about their performance and a 'plateau' period be reached and be extended till the end of their career. (cf. the 'Pragmatic Strategy' of Woods (1981) & ref. p.48 and (3)b in Fig. 4.4, p. 85).

Some beginning teachers who are probably not yet able to recover from the 'shock' would continuously fail to gain control in maintaining a reasonable level of competence in teaching and lose confidence in the profession as a whole. Some might even intend to leave the profession; the rest would try to adapt to a mode of minimal survival and stability rather than concentrate on improving their effectiveness in teaching and be less likely to grow in the process of learning to teach. (ref. (3)a in Fig. 4.4, p. 85).

For those at (3)a, the level of Growth states would be further lowered while those of the Survival states would increase; thus forming a general PCT below the level attained by the end of the second month of teaching, the 'trough' period.

For those at (3)b, since at the end of the sixth month of teaching, they have attained a certain level of competence, no great change in their level of perceived competence in teaching is likely to be detected; hence their Survival and Growth levels are not very much different from those in the previous phase.

But for those in (3)c, the Growth level would further increase and that of the Survival would decrease. Beginning teachers might feel they are in control of the environment and are confident to develop their personal styles in teaching, at least at the perceptual level.

By the end of the first year of teaching (Woods, 1981; Ryan, 1986; & Vonk, 1983), those beginning teachers who have reached (3)c mentioned in the last paragraph would have attained a higher level of perceived competence at which they begin to explore and experiment with new and personalized ways of teaching: ways leading to becoming experts in the profession in the years to come. (cf. the 'Paradigmatic Strategy' of Woods (1981) & ref. p. 16); ref. T4 in Fig. 4.4 p. 85).

Through testing of this model, possible solutions for the research questions to be presented in the next chapter may be developed.

CHAPTER FIVE

THE EMPIRICAL STUDY

A major concern is to evaluate the model of learning to learn as a useful way of describing learning to learn to teach, which is how learning to teach is viewed in this work.

Part I: The Research Questions

Two major research questions are as follows:

1) What is the nature of the 'reality shock' phenomenon if it can be shown to occur ?
   (This requires measurement of psychological states related to experience.)

2) Is there a general and predictable pattern of change in the process of learning to teach over the year ?
   (This requires measurement of a large enough sample at various time points)

The questions will be asked for all first year beginning teachers in the sample and for primary and secondary subgroups separately.

Part II: Design of the Study

The study is developmental and longitudinal in design. It is based on data collected by questionnaire and interview. It covers a period of twelve months from the last month of the pre-service teacher education programme for a population of graduating student teachers to the month they finished their first year teaching programmes (i.e. from June, 1990 to June, 1991).

A. Establishing the time points for data collection

In order to test the model on the process of learning to teach (ref. p. 85), four different points in time, June 1990, October 1990, February 1991, and June 1991 were selected for data collection. The rationale for the choice of these four time points is as follows:

(1) As indicated by the findings of the three Hong Kong Studies (Chan, 1983 & Teacher Education Study Unit 1984, 1986), the phenomenon of 'Reality Shock' has been detected after their practical teaching blocks in the primary and the secondary classes. This caused the student teachers to shift their perception of education from a more individualized and open orientation to a more authoritarian and even custodial orientation, but did not sufficiently disillusion them to the extent that they would be obviously affected in their perceived competence in teaching just before they enter the profession. It is reasonable to postulate that the teachers-to-be would most likely to be in a

'Fantasy Stage' (Ryan, 1986) at the end of their pre-service teaching education course at time point 1 (TP1) in the Model (ref. Fig. 4.4, p. 85) holding an over-estimated perception of their teaching competence. The latest time for convenient data collection was June, 1990.

(2) The school term for primary and secondary schools commences in the beginning of September in Hong Kong. Beginning teachers are usually assigned workloads and all kinds of duties in a proportion equivalent to all other more experienced staff (or even heavier at times!). Most of the time in September is allocated to the tasks of opening student files, collecting various kinds of fees and forms, attending staff, subject and committee meetings within the first month besides the normal teaching duties in the classroom which would be new and challenging. Beginning teachers would thus be intensifying their feeling of frustration or 'reality shock' towards October; so, this month was selected for data collection for time point 2 (TP2) at the end of the familiarisation phase in the model.

(3) According to the model, from the third month, beginning teachers would be more familiar with the workplace situations and most probably be able to recover from the 'reality shock' or depressive mood experienced in the previous months and gradually regain their confidence in teaching, indicating this by an increase in their perceived competence in teaching. The third time point (TP3) was set at the sixth month (February, 1990) with reference to Vonk's (1983) finding of a 'threshold stage' which ended at about the fifth or sixth month of first year teaching.

The period between TP2 and TP3 is termed the Adjustment Phase in the model to be tested.

(4) The end of the first year of teaching has been seen as an important time point in many studies on beginning teachers (e.g. Ryan, 1986; Woods, 1981; Vonk, 1983), hence it was decided that the fourth time point (TP4) for this research would be the end of June, 1991, about fifteen days before the Hong Kong school term ends. The period between TP3 (February, 1991) and TP4 (June 1991) is termed the Stabilization Phase in the model.

B. Selecting the sample of beginning teachers

The total population of this research study is the set of 789 graduates of the 1989-1990 College Term from the four Colleges of Education in Hong Kong: the Grantham, the Northcote, the Sir Robert Black College of Education and the Technical Teachers' College. After graduation from the full-time Two-year (for matriculants) and the Three-year (for Fifth Form graduates) Pre-service Teacher Education Courses in the English Stream , the fresh graduates have taken up their regular full-time teaching posts as certificated teachers teaching any subjects assigned from primary one to six, or teaching from secondary one to three in the academic elective subjects (e.g. English, Mathematics, Geography) or from secondary one to seven in the cultural elective subjects (e.g. Music, Art and Design, Home Economics and Physical Education). No formal Institutional or regular guidance programme is provided for beginning teachers and there is not any

discrimination between them and the rest of the teaching staff in the workload and responsibilities allocated by the school administration. The most explicit difference between a probationer and a non-probationer is that the former would be more regularly inspected by the inspectors from the Education Department of the Government in their first year (and two years for government school teachers) than the latter.

The distribution of the subjects of the research according to sex and College is shown in Table 5.1.

Table 5.1

Distribution of Graduates from Four Colleges of Education in Hong Kong forming the Population of the Study (as at July, 1990)
(From Hong Kong Annual Digest of Statistics 1990, Education, Census and Statistics Department, Hong Kong)

	Female	Male	Total	
Grantham Two-year	118	46	164	(1)
Northcote Two-year	120	35	155	
Northcote Three-year	91	28	119	
Sir Robert Black Two-year	150	60	210	
Sir Robert Black Three-year	93	34	127	
Technical Teachers' Three-year, Commerce	14	-	14	(2)
Grand Total	586	203	789	

Note: (1) The 57 Grantham Three-year graduates (Chinese) were not included as all others were in English stream;
(2) The 18 Technical Three-year D & T graduates' addresses were not possible to obtain at TP1.

The sample selection was designed to (i) yield a sub-sample providing data at all time points and (ii) approximate a large enough random sample at each time point. Fig. 5.1 (p. 99) summarises the sampling procedure and the response figures of the whole study.

760 (96.32%) of the 789 graduates (1990-91) from the four colleges of education in Hong Kong were approached at TP1 (June, 1990) as 23 were not possible to approach or with inaccurate addresses. Out of the total of 760, 202 responded.

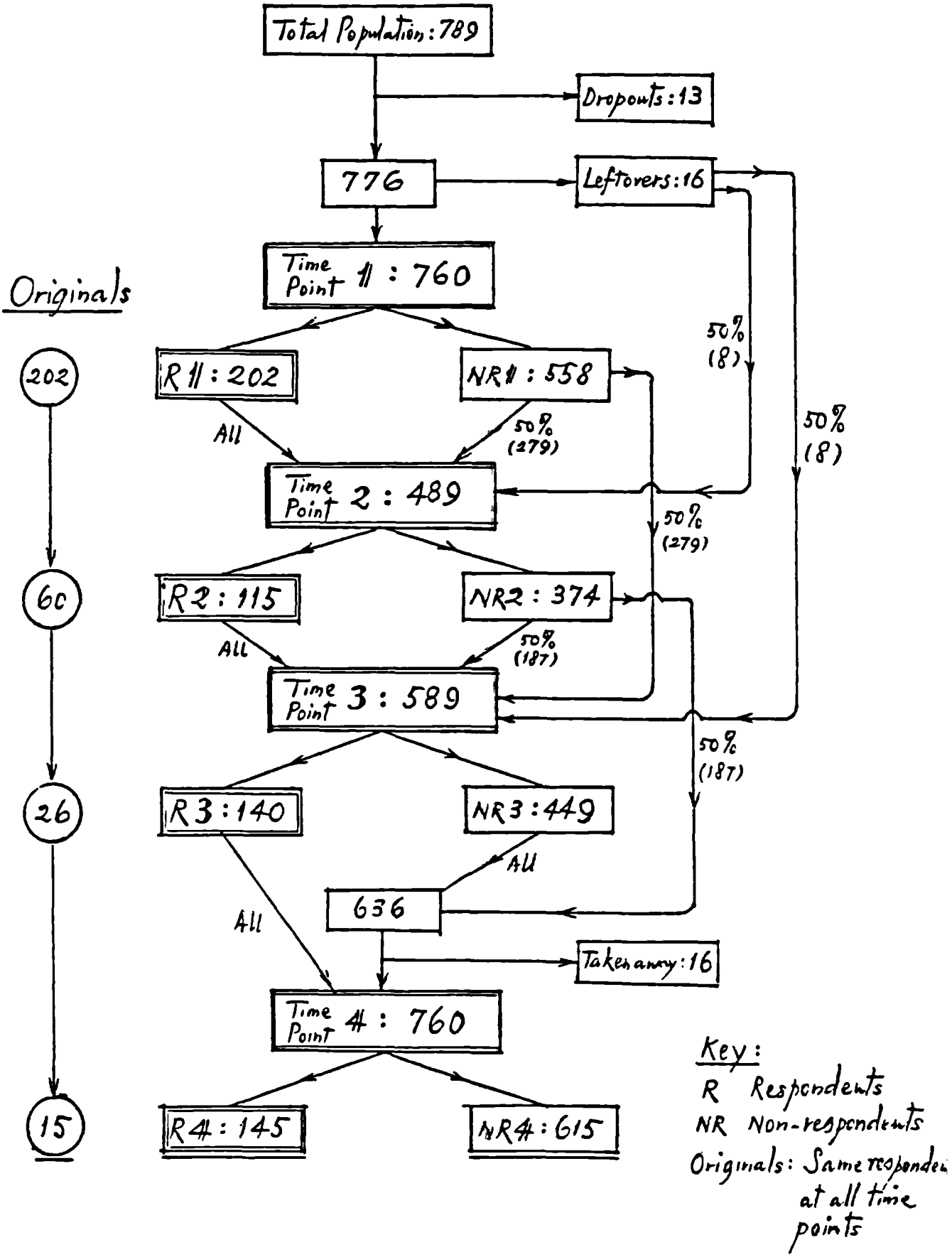
At TP2 (October 1990), all respondents of TP1 were approached, and, in order to explore bias in the non-respondents and to increase their incentives to cooperate,50% of the non-respondents at TP1, a random and stratified sample from graduates of all four colleges, were selected and approached again. Half of the 16 graduates left over at TP1 because of inaccurate information were also approached. Of the total number 489, 115 responded.

At TP3 (February 1991), all respondents at TP2 were approached, as were the remaining 50% of non-respondents at TP1 and a first 50% of non-respondents at TP2. The other half of the 16 leftovers at TP1 were also approached. Of the total 589, 140 responded.

At TP4 (June 1991), all respondents at TP3 were approached, together with the remaining 50% non-respondents at TP2 and all non-respondents of TP3 excluding 16 non-respondents randomly taken from the pool of non-respondents to round up the total sample at TP4 to 760, an equivalent to that at TP1. Out of the total of 760, 145 responded.

In total, 365 responded at one or more time points.

Fig. 5.1 Distribution of Samples at Four Time Points from June, 1990 to June 1991



To supplement the data collected from the questionnaire study at the four time points, interviews were also conducted after June 1991 within the first three months of the next school term. Of the 28 beginning teachers interviewed, 8 were sampled from the respondents responding at all four time points, 7 from all other respondents and 13 from those who had never responded at any of the four time points.

Part III: Instrumentation

The data used to test the model were derived from questionnaires and interviews designed specifically for the study. A major task was to measure perceived competence in teaching.

The general 'perceived competence in teaching' is defined by the aggregate of the scores of five psychological states, Perplexity, Control Anxiety, Experimentation, Reflection and Integration which are devised with reference to the 'Seven-stage model of stages accompanying transition' (Sugarman, 1986, p. 142; and ref. Fig. 4.4, p.85) but with emphasis on their interplay at the impact of an event upon a person based on the aleatory-change orientation in developmental psychology rather the order-change orientation on which the Sugarman's model is based. The characteristics of each state are designed on the theoretical basis of the Jordell's model of beginning teachers' socialization process (Jordell, 1987, p. 167;and ref. Fig. 3.1, p. 51). Some points in Parker's & Lewis's (1981) research report are also referred to since the psychological states of going through a 'transitional learning process' of those who are being promoted from a lower

post to a higher one in the business field would be very similar to those states of going through the process of learning to teach held by beginning teachers in their first year of teaching.

In order to measure perceived competence in teaching and to evaluate its relations to experience, two research instruments were constructed:

a) a response-typed self-report questionnaire on perceived competence in teaching, and

b) an open-ended self-report questionnaire on experience.

A. Questionnaire design - I: Beginning Teacher Development Questionnaire (BTDQ)

The items for Questionnaire I (BTDQ) have been drafted with reference to two 'dimensions':

1) dimension of beginning teachers' socialization ---

In Jordell's model (p.51), the major sets of influences on beginning teachers are structural (i.e. influences from structures within which teachers works) and personal (i.e. influences from persons with whom teachers interact). The third set is that of teachers' personal experiences from their training in the teacher education programmes and as students in schools. Item content analysis was developed according to these three aspects in this dimension (Ref. Appendix 1, p.253);

2) dimension of general developmental patterns ---

Sugarman's developmental pattern of encountering life events (p.80) and Harri-Augstein's Model of Learning-to-learn Process

(p.82) are the bases for devising the Model on the Process of Learning to Teach in Chapter Four. Items were drawn up with reference to these --- particularly the states of perceived competence.

100 items were initially drafted with an allocation of 20 for each of the 5 psychological states of perceived competence of teaching in the model, i.e. Perplexity , Control Anxiety, Experimentation, Reflection and Integration (ref. Appendix 2).

Items for Perplexity state were constructed with an emphasis on the experience of distinct discrepancies between beginning teachers' expectations and the reality in teaching as reflected through the amount of workload, the school and classroom situations and the awareness of a gap between theories learned in the colleges and the actual practices in teaching encountered.

Items for Control Anxiety state focussed on the expressions of emotionally disturbed feelings on events and relations in classroom and in school. They reflected beginning teachers' concern for survival and control in classroom discipline and in their teaching.

To construct items for the Experimentation state, emphasis was put upon the frequency and variety of strategies that beginning teachers would try out in their teaching as they became more in control of the classroom and school situations.

In Reflection state, items were set to investigate beginning teachers' increasing scope of awareness of individual pupils' needs and their personal evaluation of classroom and school events.

Integration state items focussed upon beginning teachers' expressions of confidence and adequate control and their efforts to work out their personal ways in teaching and management of school affairs.

Item responses were structured in a five-point Likert scale with ratings indicating the frequency of involvement in the activities, decisions or the state of mind presented in the items ranging from (1) for 'Almost Never', (2) for 'Rarely', (3) for 'Sometimes', (4) for 'Often', and (5) for 'Most of the time'. Care was taken to avoid response bias by reversing part of the items negatively for scoring.

The draft of items was presented to two expert educational psychologists of the Institute of Education, University of London for content validation, to two research students of the Institute of Education for face validation and to three B.Ed. undergraduate students for response trial and for comment on the readability and suitability of the items. One of the research students and the B.Ed. students were selected because they were former graduates from the Colleges of Education in Hong Kong and thus like the sample in the main study.

In early June 1989, through rigorous consultation and exchange with professional experts, the wording and expressions of each item was rewritten and refined with reference to the feedback obtained from the above consultations. The items were randomly arranged.

Questionnaire I (BTDQ) was then sent to 200 primary and secondary beginning teachers

who were sampled with random stratification from the 343 graduates of the 1988-89 College term at a college of education in Hong Kong and 120 primary and secondary beginning teachers were sampled with random stratification from the 258 college graduates (1987-88) of the same College in mid-November, 1989. The selection aimed to explore responses at approximately the beginning and the end of the first year of teaching.

By mid-December, 1989, 66 valid responses were received from the beginning teachers and 39 from the second year beginning teachers.

Results were summarised by means of Response Data Sheets (Ref. Appendix 8, p. 284).

As the item-analytic method was used for questionnaire setting, raw scores were treated through a series of computer programmes on Item Analysis Process (Cooper in Kline, 1986, p.208-245) in December, 1989. In late January 1990, with reference to the initial results on items in each state and through the consultation with the expert educational psychologists, the 100-item draft (with 20 items in each State) was tailored into the 50-item Version (with 10 items in each State) after a set of Item-Total Correlations exceeding 0.2, and a set of Cronbach Alpha coefficients exceeding 0.640 were obtained in the set of items in each state of the five states in the model to be tested. (Ref. Appendix 4, Tables A 4.1 to A 4.5, p.263-267). According to Kline (1986, p. 143), the higher the correlation of an individual item with its total in the subscale, e.g. item (1) in State 1, Perplexity, with a point-biserial correlation of 0.554 (Table

A4.1, p. 263), the better would be the item; and, ideally an index beyond 0.2 would be acceptable. The Cronbach Alpha coefficients were calculated to check the internal-consistency reliability for each subscale, i.e. each psychological state in the model proposed. By means of the Kuder-Richardson 20 (KR-20) formula, the Cronbach Alpha coefficients for all five states were calculated (ref. Appendix 4). A coefficient exceeding 0.7 would be an ideal level but a lower level would also be accepted under some circumstances (Kline, 1986, p. 144). Coefficients of States 1, 3, 4 and 5 met this criteria and State 2 scored 0.646 after two new items were added to the eight acceptable items to make up a ten-item subscale as all others. It was regarded as acceptable by the expert educational psychologists as it was close to 0.7 and it would be undesirable to limit all other four subscales to just an eight-item situation which sacrificed many useful items and shortened the test length (ref. also Kline, 1986, p. 120-121).

The content validity of tested Questionnaire I was obtained by consensus among three expert judges. Since the major areas of the structural influences, personal influences and the teacher's personal experience were reasonably covered by the remaining items, the revised version was adopted for use in the main study of this research (Ref. Appendix 5, p. 268).

As a confirmatory measure for the construct validity of questionnaire I (BTDQ), two tests by factor analysis were conducted after the main study when all data for all four time points were available for analysis.

The first set of factor analysis tests was on the subtotal scores of individual subjects in each state, the mean survival and Growth states and the total. With reference to the results indicated in the tests (ref. Appendix 13, Tables A13.1 to A13.8, p.302 to 309), each of all dimensions yield only one major factor throughout the four time points and each of them accounted for about 40% or over in the percentage of the variance in each dimension.

The second set of tests of factor analysis was on the subtotals of all five psychological states at each time point to search for any second-order factor loadings. With reference to the results indicated (ref. Appendix 14, Tables A14.1 to A14.4, p. 310 to 313), there were distinctly two groups of secondary factors, comprising Perplexity and Control Anxiety in one (Factor 2 in the tests) and of Experimentation, Reflection and Integration in the other (Factor 1 in the tests). They coincide with the original test-designed groups of 'Survival' and 'Growth' states in the model. The two accounted for about 76% or above of the total variance at each of the four time points.

B. Questionnaire Design - II: Beginning Teachers' Views Questionnaire (BTVQ)

With reference to Veenman's review (1984) and Vonk's Study (1983) on the perceived problems of beginning teachers, and the orientation of relating 'the characteristics of the setting in which the teacher begins to teach or learns to teach to the kinds

of problems they have or do not have' (MacDonald & Elias, 1983, p. 4), a set of open-ended questions was drafted to collect information about experience, especially the perceived problems encountered.

A questionnaire, BTVQ, was drafted consisting of open-ended questions on a) the most important events/difficulties encountered during the period under review, the frequencies of encounter, the methods of solution or the ways of dealing with them, and, the experiences gained from them; b) the general comments on the overall impression of teaching; c) the practicability of things learnt from the teacher education courses; and d) their expectations from professionals. (Items c and d were for a separate study not included in this thesis but put together for survey of the same group of samples.)

After slight modifications suggested by the independent judges and the comments from the three B.Ed. Students of the Institute, the First Version of Questionnaire II (BTVQ) was sent in late May 1989 to 40 first year beginning primary and secondary beginning teachers who were randomly sampled from the 258 graduates of the 1987-88 College Term at a college of education in Hong Kong.

19 responses were received in London by mid-June, 1989: 8 from the primary teachers and 11 from the secondary.

The information gathered was summarised (Ref. Appendix 7, p.270-283) and it was decided that there was no indication that it should not be used for the larger sample in the main study.

The BTVQ, besides for use with the BTDQ at TP2, TP3 and TP4, was also used as a guide for semi-structured interviews with both

the samples from respondents and non-respondents of the main study after TP4 (June 1991). Interviews with respondents were based on their previous responses on the BTVQ at different time points with further elaborations on the responses made. Interviews with non-respondents were based on the BTVQ and responses were later compared and contrasted with the parallel group of respondents interviewed.

Part IV: Field Procedures

In view of the probable response rate of around 25% to 30% as indicated by the return rates in the questionnaire design studies (32.8% for study on Questionnaire I, 47.5% for study on Questionnaire II) which were both from the same college where the researcher has been working, the decision to maximize the sample at each time point was justified.

The procedure of the main study is summarised in Table 5.2 (p. 109).

At TP1 (June, 1990), the total sample population of 760 (ref. Fig. 5.1, p. 99) was sent Questionnaire I (BTDQ) with a covering letter explaining the purpose of the study, the possible contribution of the study to the local educational communities and the value of their responses in the research. A stamped and addressed return envelope was also attached to each questionnaire.

At TP2 (October 1990), all respondents of the last study were sent both Questionnaires I and II while the 50% of non-

respondents were sampled to respond again to Questionnaire I only. This arrangement was to maximize the interest to respond from non-respondents of the previous time point.

Table 5.2

Field Procedures of Main Study

Time Point	Sample(s)	Instrument(s)
1 (Jun. 90)	all	I
2 (Oct. 90)	R (TP1)	I, II
	NR (1st 50%, TP1)	I
3 (Feb. 91)	R (TP2)	I, II
	NR (2nd 50%, TP1)+ (1st 50%, TP2)	I
4 (Jun. 91)	R (TP3)	I, II
	NR (2nd 50%, TP2)+ (all, TP3)	I
(Sep. - Dec. 91)	15: sample from all R 13: sample from NR*	Interviews (based on II)

Key: R : Respondents
NR : Non-respondents
* : Not responding at any of the 4 time points
I : Questionnaire I, Beginning Teacher Development Questionnaire (BTDQ)
II : Questionnaire II, Beginning Teachers' Views Questionnaire (BTVQ)

At TP3 (February 1991), all respondents at TP2 were sent both Questionnaires while the remaining 50% non-respondents at TP1 and the first 50% non-respondents at TP2 were sent the Questionnaire One only.

At TP4 (June 1991), all respondents at TP3 were sent both Questionnaires while the last 50% respondents at TP2 and all the non-respondents of TP3 were sent the Questionnaire One only. Two short questions to gather retrospective views of respondents were added to the end of both questionnaires for comparative studies (ref. Appendices 10, 11).

Interviews of fifteen respondents sampled from respondents at various time points and thirteen subjects sampled from the non-respondents of the study were conducted after TP4 during the period between September 1991 and early January 1992 with reference to Questionnaire Two items.

Part V: Data Recording and Analysis

A. Questionnaire I: Beginning Teacher Development Questionnaire

The analysis of Questionnaire I data is in general a search for patterns of changes.

The first set of analyses was on the identification of the state with the highest raw subtotal score attained, the dominant state, at each time point by each individual in order to search for the distribution pattern of dominant states at each time point. Consequently the state with the highest percentage, the

modal state, would be identified at each time point for the whole group. A dominant state would be an indication of the focus of concern of an individual at a time point. Similarly, a modal state would be the focus of concern of a group. These measures would be regarded as useful indicators for identification of focuses of concerns of either the individuals or the groups.

The second set of analyses was on the search for the patterns of changes in the individual states, the mean Survival and Growth states and the total across all time points taking into account all data from Questionnaire I. For subtotals of individual states, since the higher the raw scores in Perplexity and Control anxiety means the lower the rating in perceived competence in teaching, raw scores of these two states were reversely scored to facilitate adding them to the other three state subtotals to form a grand total score of perceived competence in teaching.

To facilitate data recording, a specially-designed data response sheet had been prepared for Questionnaire I to tally all the responses returned. Scores for different states are easily summed up on the sheets as items referring to the same states are arranged in the same columns. (Appendix 9, p. 292).

Spaces were provided for the subtotals of each of the states and for the grand total of all states to be summarised in each of the response sheets for further analysis.

As a data summarising procedure, scores of each respondent on Questionnaire I were summed up into state sub-totals (raw scores), state subtotals (converted scores, for Perplexity and

Control Anxiety only), and the grand total (sum of reversely scored Perplexity State and Control Anxiety state subtotals and the subtotals of all other states).

To facilitate the first set of analyses on identification of dominant and modal states, state subtotals from raw scores were converted into z-scores for cross-state comparisons. By the dominant states identified, respondents at each time point were then grouped into five state groups according to their dominant states in z-scores. Modal state for each time point was then identified from the percentages of the five state groups at the same time point.

By further regrouping the dominant states into Survival states (the Perplexity and Control anxiety states) and the Growth states (the Experimentation, Reflection and Integration states), more meaningful psychological analysis was also carried out. Instead of identifying one modal state at a time point, the interplay of the two state group aggregates could be detected. (N.B. Growth states were weighted because there were three states in this group but two for the Survival states). The focus of beginning teachers' concerns at different time of the year for either survival or growth might be more clearly seen through these analyses.

As a further search for patterns of changes by incorporating all state scores in each subject instead of identifying only a dominant State, the mean scores for each of the states, the mean Surviv-

al and Growth states, and the grand totals across all four time points were plotted for the whole group and for comparisons between the primary and secondary subgroups.

Statistical confirmation of patterns of change detected graphically in the previous sections were conducted in

1) the correlation between the dominant states and the grand totals for individuals at different time points,

2) Analysis of variance (ANOVA) for comparisons between the mean scores at each time point calculated separately for five states, the mean Survival and Growth states and the grand totals. The Tukey method was used to check for specific time points where the significant changes occurred.

As a cross-validation of the findings, the results from the smaller group of respondents who had responded at all four time points were compared with those from the larger group of respondents.

B. Questionnaire II: Beginning Teachers' Views Questionnaire

For Questionnaire Two (BTVQ), data from each sub-topic are initially grouped under sub-titles at each time point for the whole, the primary and the secondary groups under the topics (1) the most important events/difficulties and (2) personal impressions on teaching.

Since the purpose of the data gathered in Questionnaire II was to complement the results obtained in the Questionnaire I at each of the four

time points, the most important events/difficulties encountered at TP2, TP3 and TP4 were related to the patterns of change in perceived competence in teaching for the whole group and the primary and secondary subgroups. For purpose (2), views were grouped and analysed with reference to the general grouping of Survival and Growth identified from the individuals' dominant states at different time points in Questionnaire I results.

An integration of results from the self-reporting Questionnaire I and II responses at four time points and from the interviews was conducted and presented at the end of the analyses of the study to illustrate the applications of the instruments in the study of beginning teachers' process of learning to teach.

Part VI: Methodological Assumptions

1. As it is assumed that no formal instructional programme on Learning to Teach is provided for the beginning teachers during their first year of teaching and they have no full-time formal classroom teaching experience in the primary nor in the secondary schools prior to their formal training in the College, the beginning teachers would be basically dealing with problems or making decisions on their own with reference to their previous experiences and knowledge.

2. Since the scope of teacher education curricula of the four colleges of education is centrally monitored (ref. Chapter Two Section A-1, p. 18), the professional training backgrounds of

beginning teachers from the four colleges were assumed to be relatively uniform. The sample population of 760 taken from graduates of the colleges at the same year, the 1989-1990 college term, was assumed to form a relatively uniform group for further sampling.

3. The subjects who were graduates from the colleges using English as the medium of instruction were assumed to be able to understand thoroughly the English and the meanings of the wording in the Questionnaires.

4. The questionnaires returned were assumed to have been completed by each subject without assistance or influence from any others.

Part VII: Limitations

1. The degree of generalizability of findings is affected by the lower rates of response ranging between 20% to 30% at various time points of the research.

2. Due to the shortage of time and manpower, only small samples of respondents and non-respondents were sampled for interviews, thus, possibly lowering the degree of generalizability of data to complement the findings from the general studies of much larger samples.

3. Total number of cases for follow-through studies throughout the whole period of research was anticipated to be very small as these subjects would have to be very co-operative and understanding Since they were facing difficulties of all kinds at the various time points in their first year teaching.

CHAPTER SIX

PERCEIVED COMPETENCE AS MEASURED BY THE BEGINNING TEACHER DEVELOPMENT QUESTIONNAIRE

Part I: Changes in Psychological States of Individuals and in Groups

Introduction

It seemed reasonable, from the model to be tested, to treat the data with the expectation that an individual would be more likely to be in one of the five possible psychological states than others at a particular point in time. This would be regarded as the dominant state for that individual. For a group, the dominant state group with the highest percentage among the five at a time point could be regarded as the modal state at that time point. The following analyses were carried out in these terms.

A. The whole group

Responses for the whole group and the primary and secondary subgroups of beginning teachers are separately dealt with in this and the following sections.

Table. 6.1 (p. 119) shows the percentage distribution of individuals' characteristics by their dominant states at the four time points.

The modal states that emerge from this are Perplexity at TP1, Experimentation at TP2, Perplexity at TP3 and Perplexity jointly with Control anxiety at TP4. This pattern suggests that analysis in terms of Survival and Growth, according to the model, will be useful.

Because there are only two Survival states (Perplexity and Control Anxiety) compared with three Growth (Experimentation, Reflection and Integration), the aggregate scores from Tables are weighted and averaged appropriately. The analysis is shown in Fig. 6.1 (p. 120).

If we look at Fig. 6.1, we see that the Survival states dominate at all time points but the range of variation between time points is small for the Survival states and even smaller for the Growth states. It is thus useful to analyse the primary and secondary subgroups separately to see whether the same situations occur.

Table 6.1

Distribution of All Beginning Teachers by Percentage in Their Dominant States at Four Time Points

Time Point / % State	One Jun 90	Two Oct 90	Three Mar 91	Four Jun 91
1. Perplexity	25.25*	21.74	23.57*	24.14*
2. Control Anxiety	20.79	21.74	22.14	24.14*
3. Experimentation	18.32	23.48*	20.72	16.55
4. Reflection	17.32	16.52	13.57	20.00
5. Integration	18.32	16.52	20.00	15.17
Total %	100.00	100.00	100.00	100.00
Total Number of Respondents+	202	115	140	145
Sample Size++	760	489	589	760
Responding rate(%)	26.58	23.52	23.77	19.08

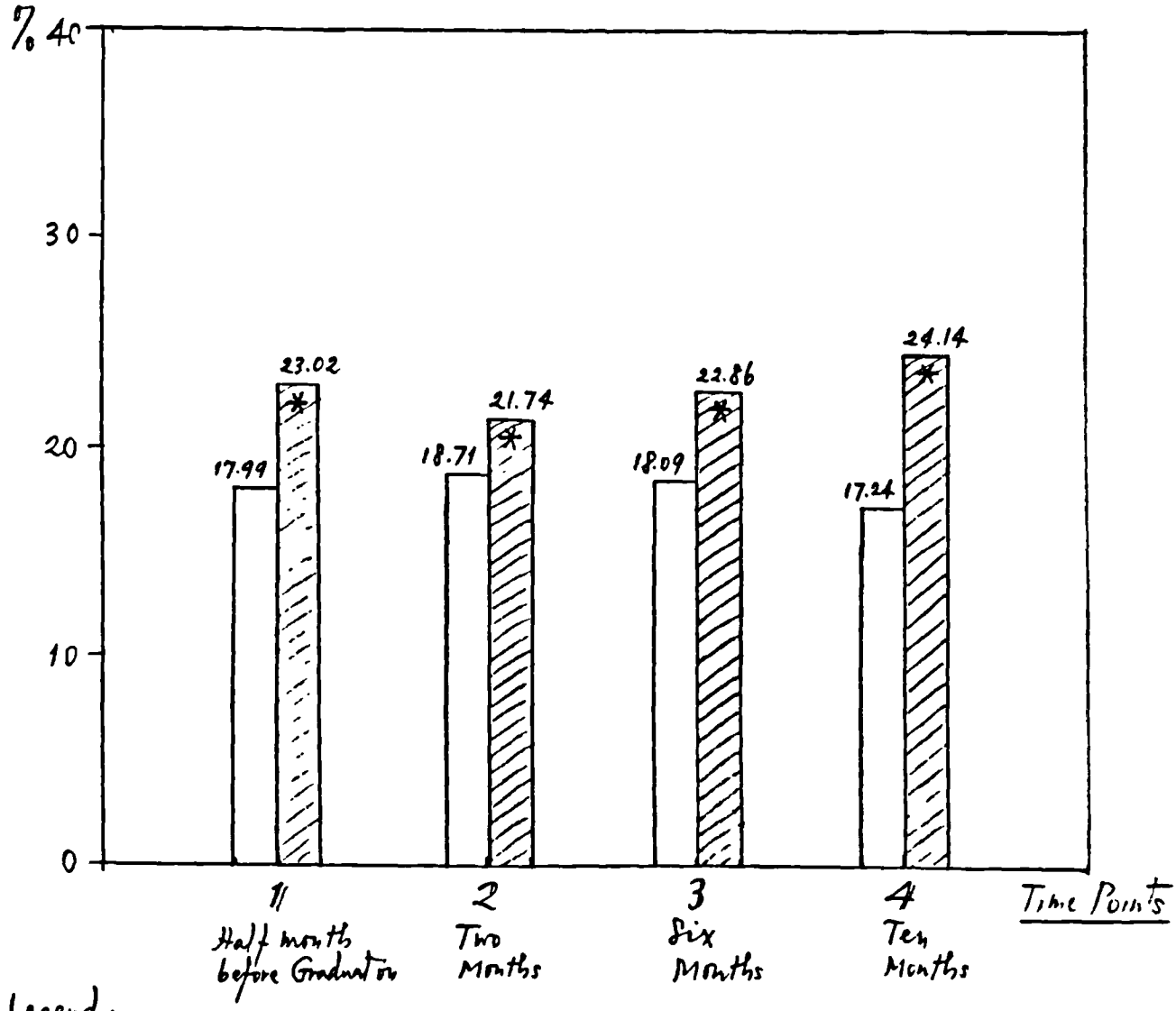
* : Modal state for the group at the time point

+ : Respondents of mailed questionnaire at different time points

++ : Sampled populations for different time points, (ref. Fig. 6.1, p. 121)

Fig. 6.1

Percentage Distribution of 'Survival' and 'Growth' State Means of All Beginning Teachers



Legend:

'Survival': Mean Percentage of States of Perplexity and Control Anxiety

'Growth': Mean Percentage of States of Experimentation, Reflection and Integration.

* : More dominating group at time point

B. The Primary Subgroup

Table 6.2 (p.122) reports the results for the primary subgroup.

At TP1, the modal state is Experimentation, and for the rest are Perplexity at TP2, Integration at TP3 and Perplexity again at TP4. This pattern of focus of concern for this subgroup may initially reflect that there might have been a change from a more confident state to a much lesser one from TP1 to TP2, a considerably recovery from TP2 to TP3 and a further drop from TP3 to TP4.

To gain a more global view through the averaged percentages of Survival and Growth states at each time point, Fig. 6.2 (p.123) is presented. It generally supports the picture suggested above.

From a small difference in TP1 between the Survival and Growth, Survival increases and Growth decreases towards TP2. This distinctly indicates a shift from a more confident level to a much less confident level at which the percentage of raw subtotals of Survival states exceeds that of the Growth by a considerable amount (over 10%). Something traumatic might have happened between TP1 and TP2 to cause this changes of concern. Along a similar line of thinking, it can be said that there is a regaining of confidence from TP2 to TP3 and a return to lower level of confidence from TP3 to TP4.

Table 6.2

Distribution of Primary Beginning Teachers by Percentage in Their Dominant States at Four Time Points

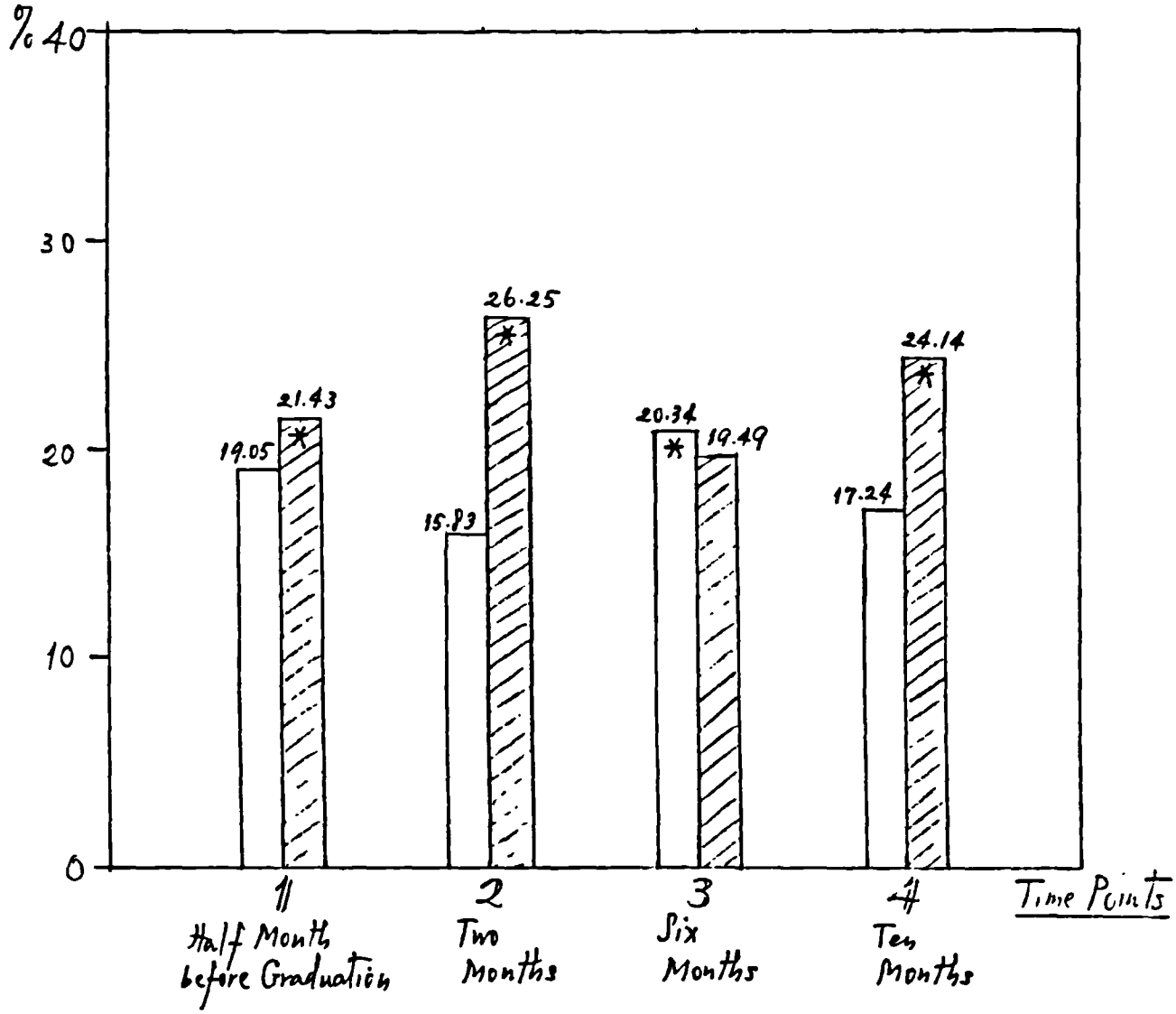
State	Time Point %	One# Jun 90	Two Oct 90	Three Mar 91	Four Jun 91
1. Perplexity		22.86	27.50*	18.64	29.30*
2. Control Anxiety		20.00	25.00	20.34	18.97
3. Experimentation		25.71*	17.50	23.73	13.79
4. Reflection		17.14	10.00	10.17	18.97
5. Integration		14.29	20.00	27.12*	18.97
Total %		100.00	100.00	100.00	100.00
Total Number of Respondents		35#	40	59	58

: Sub-group of Pre-service Respondents who became primary beginning teachers in subsequent studies.

* : Modal state of the primary subgroup at the time point.

Fig. 6.2

Percentage Distribution of 'Survival' and 'Growth' State Means of Primary Beginning Teachers



Legend:

'Survival': Mean Percentage of States of Perplexity and Control Anxiety

'Growth': Mean Percentage of States of Experimentation, Reflection and Integration.

*: More dominating group at Time point

C. The Secondary Subgroup

Table 6.3 (p.125) reports the findings for the secondary group.

As shown in Table 6.3, the modal states emerge are Perplexity at TP1, Experimentation at TP2, Perplexity again at TP3 and Control Anxiety at TP4. According to the model, this group might have shifted their focus from a survival concern to a growth concern between TP1 and TP2 but back to the survival focus at TP3 extending to TP4. The drop at TP3 would indicate some less desirable perceptions around that time of the year. A more vivid picture can be seen in Fig. 6.3 (p.126).

As revealed in Fig. 6.3, there is a reversal in the more dominating group from TP1 to TP2 but their differences are relatively small. But the change from TP2 to TP3 would clearly show a change from a more confident level of concern to a much less confident one as there is a considerable increase in percentage of Survival group with a simultaneous decrease in that of the growth. Some less desirable situations might have been experienced by that time of the year. This effect is relatively kept at TP4 as the percentages are similar to those at TP3.

Table 6.3

Distribution of Secondary Beginning Teachers by Percentage in their Dominant States at Four Time Points

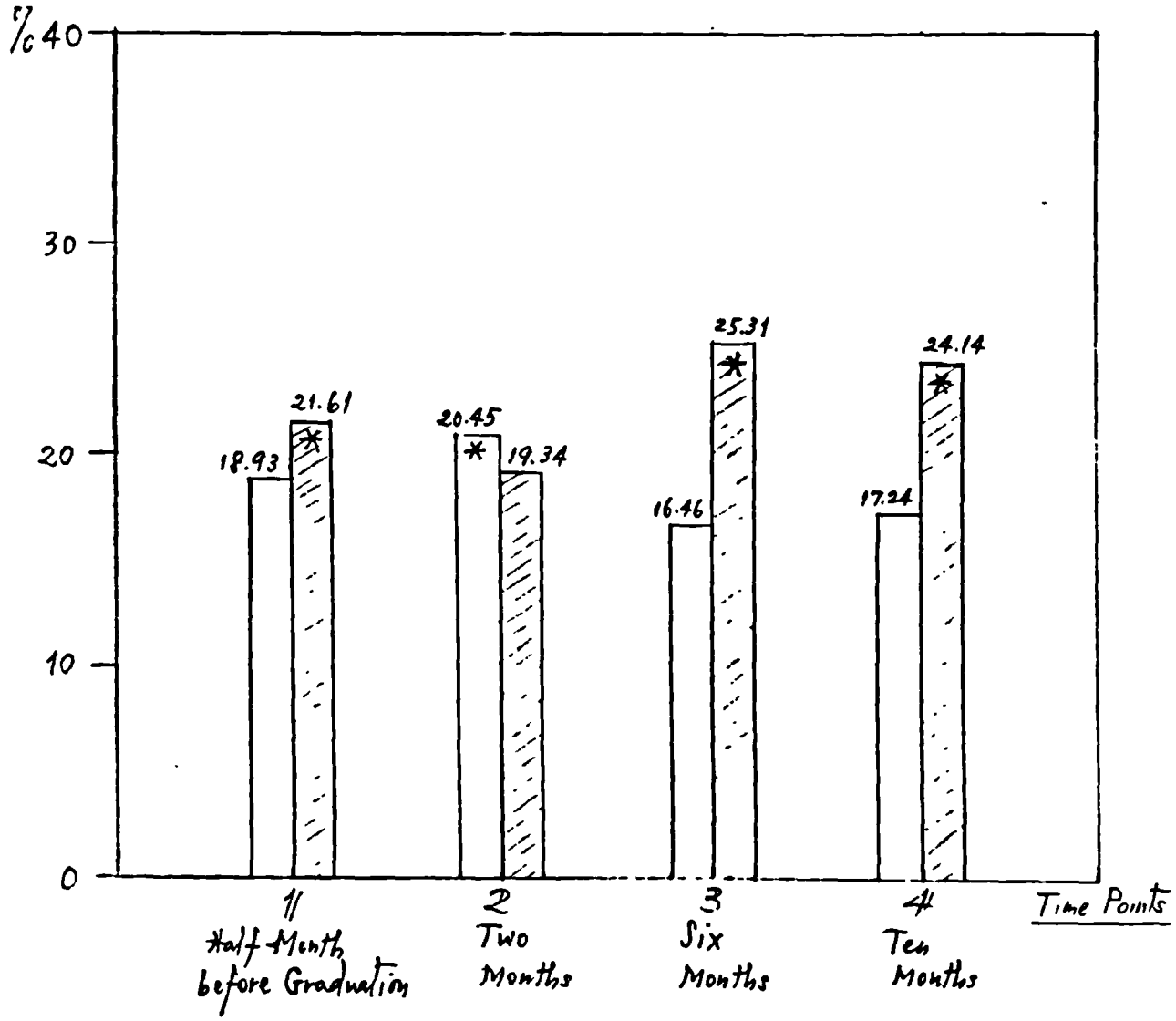
Time Point / State	One# Jun 90	Two Oct 90	Three Mar 91	Four Jun 91
1. Perplexity	29.63*	18.67	27.16*	20.69
2. Control Anxiety	13.58	20.00	23.46	27.59*
3. Experimentation	16.05	26.67*	18.52	16.55
4. Reflection	25.93	20.00	16.05	20.00
5. Integration	14.81	14.67	14.81	15.17
Total %	100.00	100.00	100.00	100.00
Total Number of Respondents	81#	75	81	87

: sub-group of Pre-service Respondents who became secondary beginning teachers in subsequent studies.

* : Modal state of the subgroup at the time point.

Fig. 6.3

Percentage Distribution of 'Survival' and 'Growth' State Means of Secondary Beginning Teachers



Legend:

'Survival': Mean Percentage of States of Perplexity and Control Anxiety

'Growth': Mean Percentage of States of Experimentation, Reflection and Integration.

* : More dominating group at time point

D. The modal states and the totals: a correlational study

To explore whether the dominant state of an individual relates positively with the grand total at each time point, correlational tests were conducted (ref. Appendix 15, p. 314).

As shown in the Appendix 15 Table A15.1, the dominant states correlate significantly and positively with the total scores for each individual at all time points. It is supportive to the use of dominant states for individuals in identification purposes since a state of lower PCT would reflect a lower general PCT. But, it is still necessary to be cautious when dominant states are involved in computations because much information about an individual's PCT scores is left out in the identification of the dominant state.

E. General Conclusions:

If we compare the patterns of change in modal states of the whole group, the primary and the secondary subgroups from Tables 6.1 to 6.3 and Fig. 6.1 to 6.3, we can deduce several points of interest:

(1) The primary subgroup have encountered a lowering from a 'Growth' state to a 'Survival' state from TP1 to TP2, a possible change in line with the 'reality shock' phenomenon. The dramatic shift from TP2 to TP3, Perplexity to Integration, would be regarded as a sign of the regaining of perceived competence in teaching after the shock and, the following drop back to Per-

plexity at TP4 would be the consequence of another encounter of unfavourable events.

More evident changes in the focuses of major concern through the interplay of Survival and Growth state averages in percentage were also supportive of the picture discovered in the separate state groups.

The process of shift in focus of concern of the primary subgroup is regarded as a supportive evidence for the model proposed.

(2) The general shifting in focuses of concern of the secondary subgroup is in general supportive of the postulated changes in the model though the timing for the 'trough' was delayed to TP3 instead of TP2 as found in the primary subgroup. Further analysis is required to verify this initial finding; but, in principle, the secondary subgroup might have encountered a similar shock to that of the primary in the second part of the year.

(3) Judging from the focuses of concern of the whole group as found in Table 6.1 and Fig. 6.1, the postulated changes in the model are not supported. The major possible reason for this is the balancing effect of the different 'trough' periods of the two subgroups (primary at TP2 and secondary at TP3), when all shifting of focuses are summed up into the whole group.

(4) The identification of dominant states for the individuals and the modal states for the groups at a certain time point would approximately indicate the individuals' or the groups' major

concern at the particular time point. Thus they may be used as quick indicators for planning purposes.

In view of the inconclusiveness of the exploration for changes in the whole group and for further verifications for the postulated changes in the model, data of all state subtotals have to be made use of in the search for patterns of change which can be tested by inferential statistical means. Analyses in the next part are treated as stated in this paragraph.

Part II: Distribution Patterns of Mean Scores of Perceived Competence in Teaching

Introduction

To obtain a more comprehensive picture of change in the perceived competence in teaching for an individual rather than taking the dominant state at a time point, the scores of the five states, the mean Survival and Growth states, and the grand total are taken into consideration.

By definition in the model, the perceived competence in teaching (to be abbreviated as PCT) is the overall aggregate of the subtotals of each of the five states. Since high scores for Perplexity and Control Anxiety are indicative of low perceived competence in teaching, their raw scores are reversed before adding up with other state subtotals to obtain a grand total score.

The interplay of separate states forms the group 1 pattern of change in PCT so as to disclose the more influential states in the change of PCT at different times.

To explore the dominance of the Survival or Growth states at different times, their interplay is illustrated in order to detect more refined changes in the PCT across time points. This is the group 2 analysis of patterns of change in PCT.

The pattern of change in the grand total across the time points shows the general trend of change in PCT. This forms the group 3 pattern, the most generalised pattern of PCT.

Analyses of each group are presented for the whole group and the primary and secondary subgroups in the sections to follow.

A. The Whole Group

In Fig. 6.4 (ref. p.132), the mean for each state of the group at each time point (ref. Table 6.4, p.133) is individually marked in the figure and the general trends for individual states across the four time points are constructed.

The questionnaire recording was designed in such a way that a move from lower to higher scores indicated a move from lower to higher levels of PCT.

From the figure, it can be seen that all state scores decrease from TP1 to TP2 with the exception of that of Control Anxiety which increases slightly instead of decreasing. From TP2 to TP3, all Growth states, Experimentation, Reflection and Integration increase while those of the Survival states, Perplexity and Control Anxiety continue to decrease. Changes from TP3 to TP4 are more varied and the magnitude is also relatively smaller than at all previous time points. Reflection is higher than all the other means at all times while Control anxiety is lower than the rest at all times and its variations are relatively smaller than all Growth states.

Except Perplexity at TP2 and TP3, all Survival states are lower than the Growth states.

Fig. 64 Perceived Competence in Teaching: Mean Scores for Each State for All Teachers

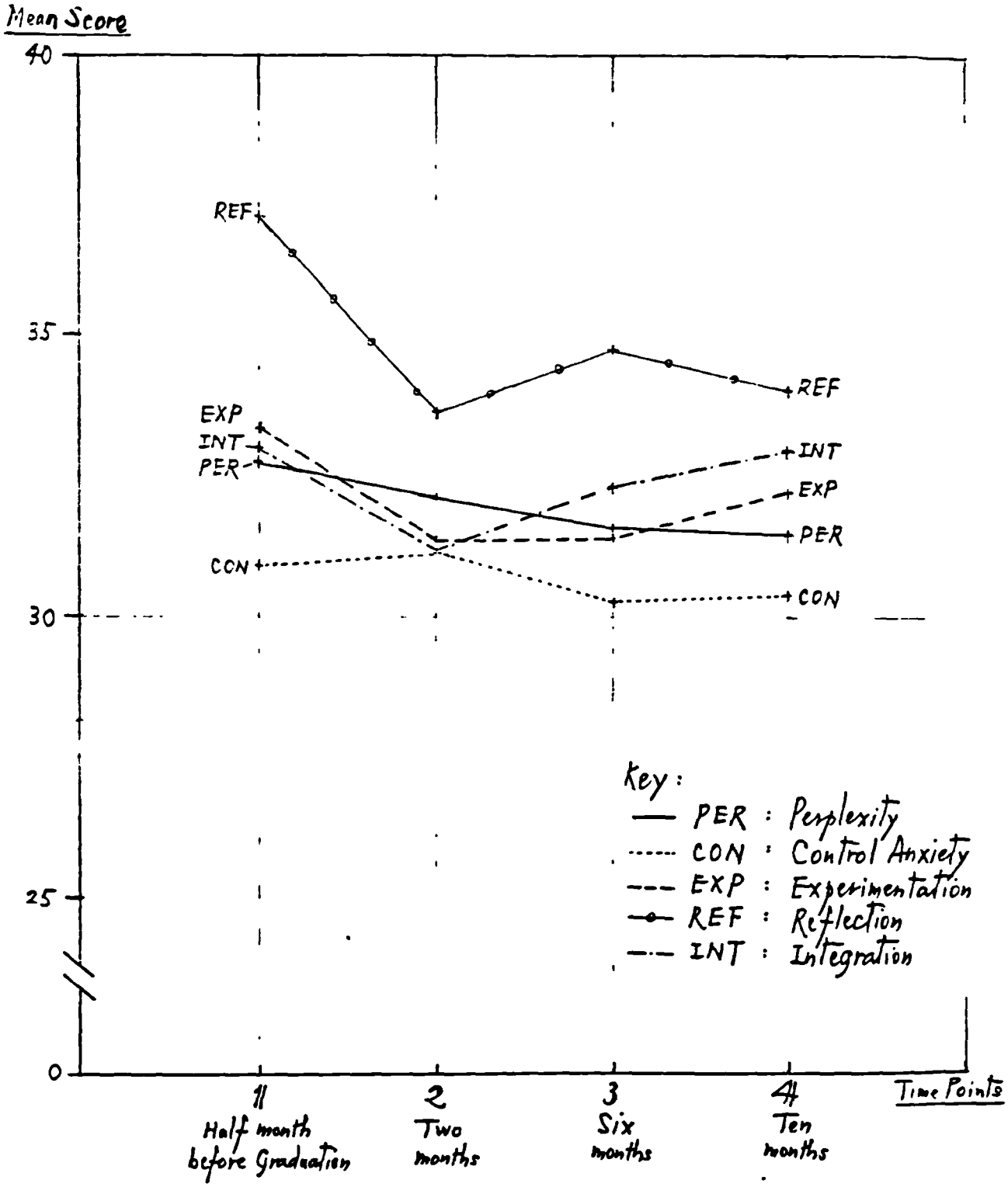


Table 6.4

Means and standard deviations of Five states, Survival and Growth states and totals
(Whole group)

		Time Point 1	Time Point 2	Time Point 3	Time Point 4
Perplexity	*m*	32.84	32.06	31.59	31.48
	sd	4.42	4.91	5.36	5.13
Control Anxiety	*m*	30.87	31.15	30.24	30.37
	sd	3.72	4.16	4.30	4.56
Experimentation	*m*	33.30	31.38	31.96	32.17
	sd	4.15	4.36	4.61	4.18
Reflection	*m*	37.10	33.66	34.73	33.99
	sd	3.92	4.13	4.66	4.82
Integration	*m*	33.05	31.14	32.36	32.98
	sd	4.55	4.56	4.71	4.44
Survival #	*m*	31.85	31.60	30.92	30.92
	sd	3.71	4.00	4.45	4.39
Growth ##	*m*	34.49	32.06	33.02	33.05
	sd	3.71	3.81	4.12	3.91
Total	*m*	167.17	159.39	160.89	160.98
	sd	14.35	15.83	17.57	16.80

Key: *m* : Mean
sd : Standard deviation
\# : Mean of Perplexity and Control Anxiety (converted scores)
: Mean of Experimentation, Reflection and Integration

Referring to Fig. 6.5 (p.135) and Table 6.4 (p.133), we consider that the variation in mean 'Survival' state is relatively smaller than that of the Growth and is lower than the latter at all times. For the mean 'Growth' state, there is a decrease from TP1 to TP2 and an increase from TP2 to TP3. The change between TP3 and TP4 is minimal.

Summing up, since the mean 'Survival' state varies in a smaller and more even manner throughout the time points, the more obviously changing pattern of the 'growth' state affects the general trend of change in the mean total scores at different times and thus seems to be the main contributor to change in the mean scores of PCT at different times.

In Fig. 6.6 (p.136), the mean total scores (ref. Table 6.4, p.133) are shown. These smooth out the variations between the various states. But if the actual trends in the constituent states are similar, the mean total line should reflect the trend even more vividly. In fact, the graph of the overall perceived competence means described is very similar to the trend line for the Growth state means in the previous paragraph because scores for the Survival state are relatively unchanged across the four time points.

Up to this stage, the pattern of Change as reflected in the variations of the mean scores of perceived competence in teaching for the five states, the Survival and Growth states, and the grand total is clearly a decrease from TP1 to TP2, an increase from TP2 to TP3 and a relatively much smaller increase from TP3 to TP4 for the whole group of beginning teachers.

Fig. 6.5 Perceived Competence in Teaching: Mean Survival and Growth Scores for All Teachers

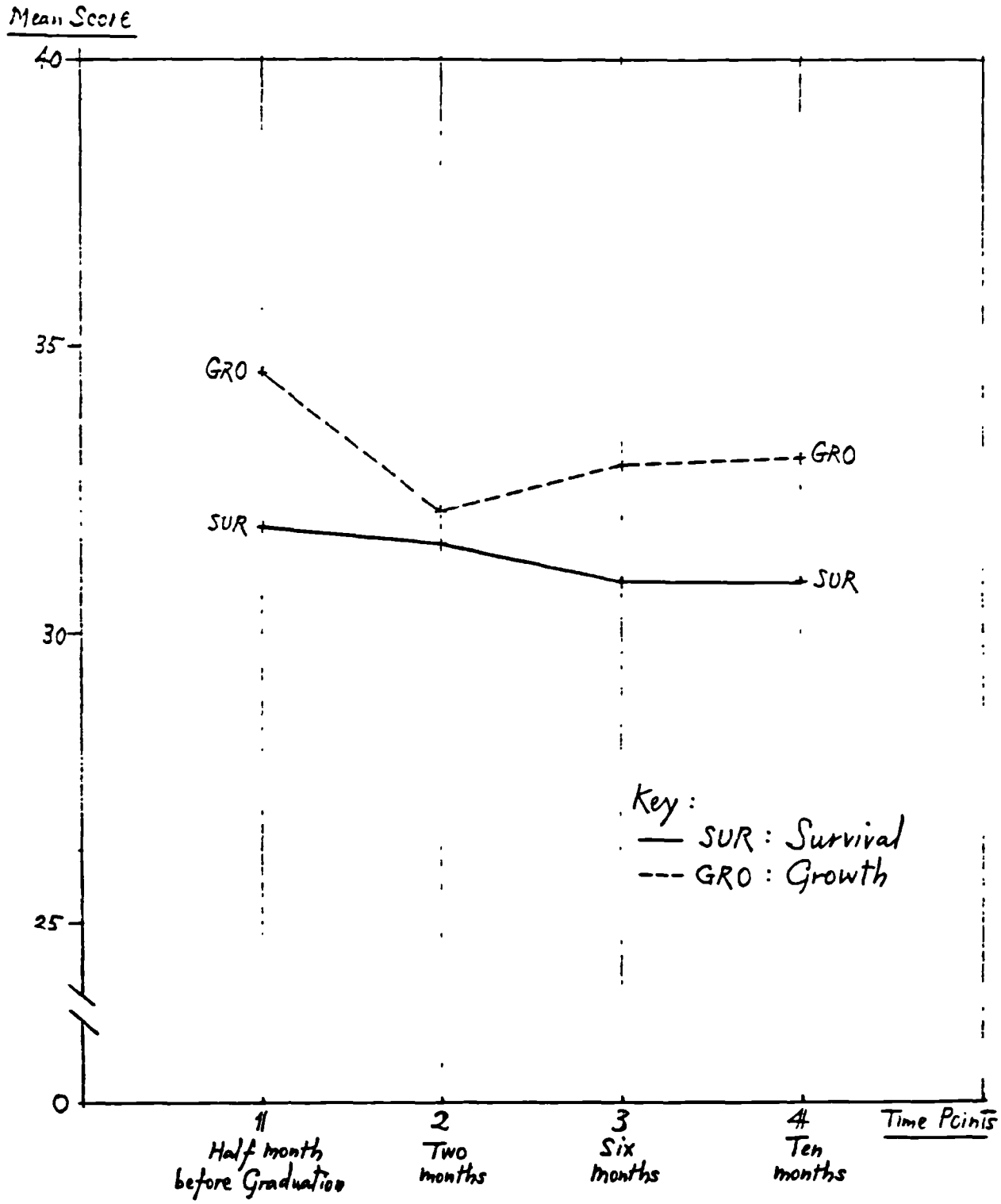
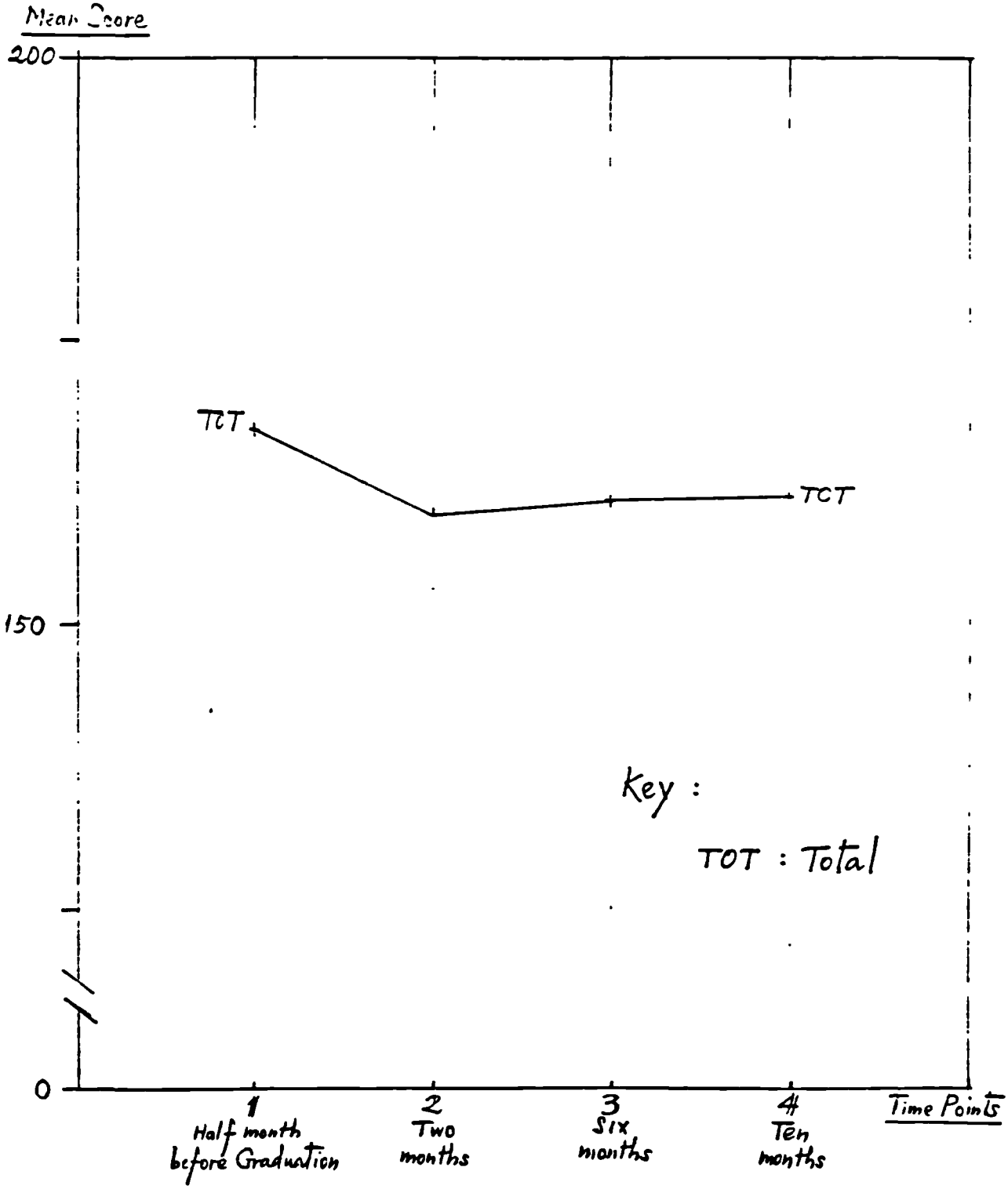


Fig. 6.6 Perceived Competence in Teaching: Mean Total Scores for All Teachers



To check the significance of variations by level and by time in each of the five states, the 'Survival' and 'Growth' states and the mean totals, the 2 x 4 analyses of variance for independent groups were calculated (ref. Appendix 16, Tables A16.1 to A16.8, p. 315 - 322).

The two levels in the whole group are the primary and the secondary; and, the four time points are June 1990, October 1990, February 1991 and June 1991.

From Tables A16.1 to A16.8, the time dimensions of Experimentation (Table A16.3), Reflection (Table A16.4), Integration (Table A16.5), mean 'Growth' state (Table A16.7) and mean totals (Table A16.8) have shown significant difference at 0.05 level. This means there exist significant changes between certain time points in these aspects. Further tests are required to identify the exact periods.

To check the specific time points at which each of the significant cases occurred, the Tukey method as used for a posteriori search for statistical significance in the change patterns of PCT between a) TP1 and TP2, b) TP2 and TP3, and c) TP3 and TP4 as these were pairs for the Familiarization, the Adjustment and the stabilization Phases in the Model on the Process of Learning to Teach used for this research.

The group 1 analysis of Table A16.9 (p. 323) suggested that Experimentation, Reflection and Integration decrease significantly from TP1 to TP2. No statistically significant changes were detected for other states in the same period nor for all states in the other two time intervals.

The group 2 analysis, suggested a significant drop

in the mean 'Growth' state from TP1 to TP2 but insignificant changes between other time intervals; no changes are noticeable in the mean Survival state across all time points. The fact that the Survival states stay at a relatively uniform level throughout the year might imply that the beginning teachers have been keeping relatively consistent levels of Perplexity and Control Anxiety throughout their first year of teaching.

For the Totals, the group 3 analysis, a significant negative change in PCT from TP1 to TP2, the Familiarisation Phase in the model, is detected but since then, there have been no obvious changes from the level attained at time point Two till the end of the first year for the whole group.

Judging from the signs of the q-values in Table A16.9 (p.323), there was a possible trend of increase in PCT during the final two periods from TP2 to TP4 in general in nearly all items, especially in the mean 'Growth' states and the Totals.

For the 'Growth' states, it was highly likely that they formed a relatively more influential set of measurements for the overall pattern of change in beginning teachers' perceived competence in teaching as they had contributed directly to the significant change in the mean Totals.

Whether the significant decrease in the Familiarization Phase detected had any associations with the traumatic 'reality shock' possibly experienced by the beginners will be further analyzed in the studies in the next chapter with results from Questionnaire II (BTVQ).

B. The Primary Subgroup

In Fig. 6.7 (p.142), the mean scores for PCT (ref. Table 6.5, p.143) for all states except Control Anxiety decrease from TP1 to TP2, and increase from TP2 to TP3. Changes between TP3 and TP4 are more varied and of lesser magnitude. From TP1 to TP3, the three Growth states change in a relatively uniform way, while the two survival states change less and differently. Reflection varies in a most distinct manner from TP1 to TP2. Integration uniquely increases from TP3 to TP4 while all others decrease.

Fig. 6.8 (p.144) and Table 6.5 (p.143) shows that the mean Survival state scores decrease, with only a relatively small variation across the time points, very gradually from TP1 to TP4. As for the mean Growth state, a distinct decrease from TP1 to TP2 is followed by an increase from TP2 to TP3, and relatively little change from TP3 to TP4. At TP2, the mean score is even lower than that of the mean Survival state possibly hinting that the decrease from TP1 to TP2 is much more considerable than that of the Survival.

In Fig. 6.9 (p.145) and Table 6.5 (p.143), the mean Total trend line of PCT for the primary beginning teachers clearly shows a
decrease from TP1 to TP2, an increase from TP2 to TP3 and a very small decrease from TP3 to TP4.

It is appropriate here to sum up the patterns deduced from the analyses of the three levels in the primary subgroup. The general

trend of change in PCT is in line with that of the general trend line of the whole group, but with greater magnitude of change between TP1 and TP2, and between TP2 and TP3. Since the general pattern of the whole group is the average of those of the two subgroups of primary and secondary beginning teachers, a smoothing effect might be cause for a less distinct variation in the whole group than in the constituent subgroups if there are contrasting differences at the same time points.

To compare the significance of differences between mean scores adjacent time points in all five states, the mean Survival and Growth states and mean Totals of the primary subgroup, the simple main effects of the primary subgroup across all time points in all the above-mentioned items were extracted from Appendix 16, Tables A16.1 to A16.8 (p. 315 - 322) and presented in Tables A16.10 to A16.17 (p. 324 - 330).

A separate set of Tukey tests calculated (ref. Table A16.18, p. 331) demonstrated that the Reflection state decreases significantly from TP1 to TP2 and increases from TP2 to TP3; Integration increases significantly from TP2 to TP3.

The mean Growth state scores also decrease and increase significantly in the same manner as Reflection from TP1 to TP3.

The general trend of decrease in the Familiarisation Phase from TP1 to TP2 is possibly shown in the signs of the q-values in the Table while a general trend of increase in the Adjustment Phase from TP2 to TP3 is also shown in the negative signs of the q-values of the the rest in the Table.

None of the changes from TP3 to TP4 passed the tests for sig-

nificance and judging from the signs of the q-values, the magnitude is relatively much smaller and the trend of change is not distinct.

Summing up, the general trend of decrease from TP1 to TP2 is significantly supported by changes in Reflection and mean Growth state, and the increase from TP2 to TP3 is supported significantly by Reflection, Integration and mean Growth state. There is no distinct trend of change in the Stabilization Phase from TP3 to TP4.

Fig. 6.7 Perceived Competence in Teaching: Mean Scores for Each State for Primary Teachers

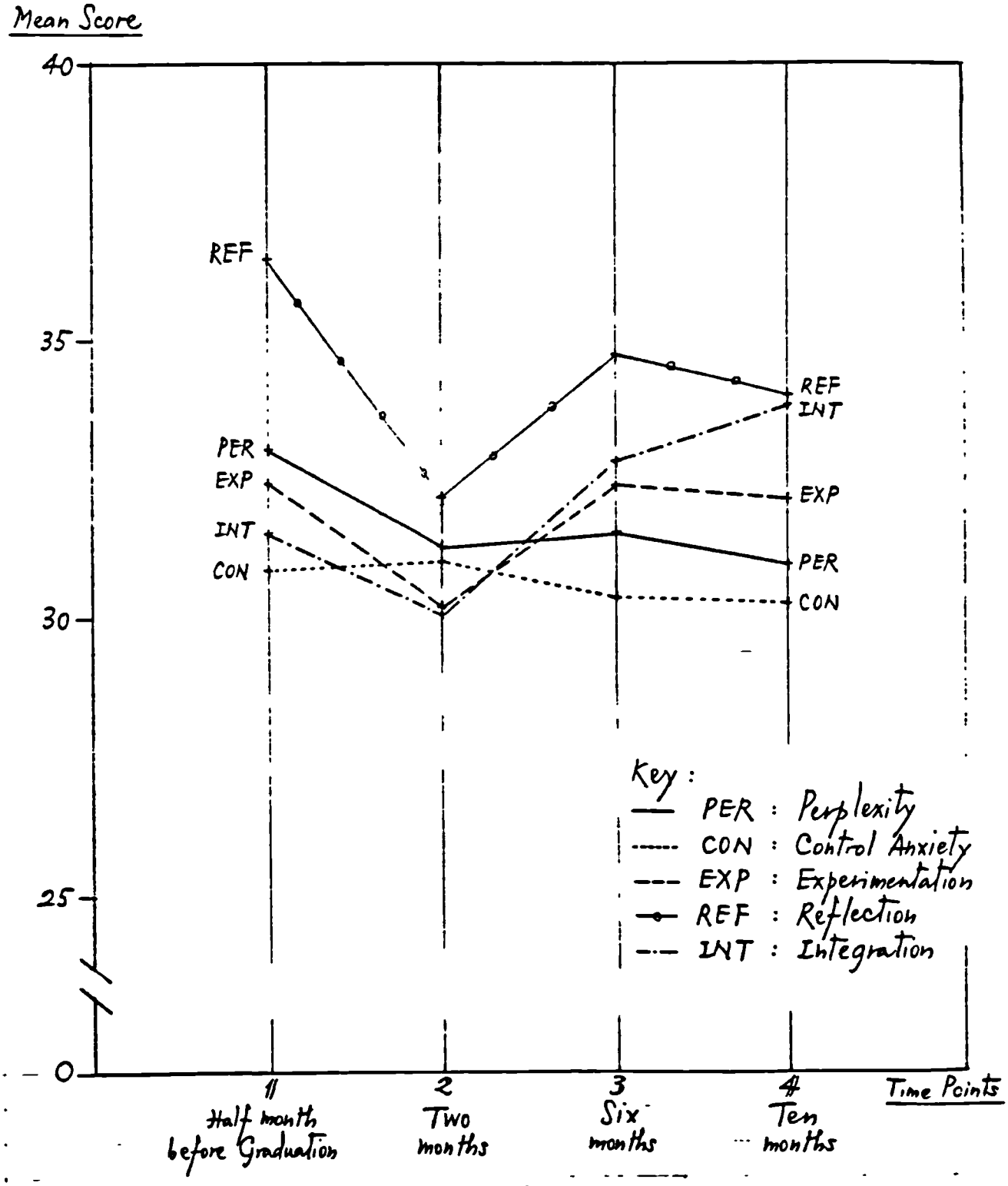


Table 6.5

Means and standard deviations of Five states, Survival and Growth states and totals
(Primary Subgroup)

		Time Point 1	Time Point 2	Time Point 3	Time Point 4
Perplexity	*m*	33.06	31.27	31.56	30.97
	sd	3.10	4.99	4.82	5.47
Control Anxiety	*m*	30.89	31.08	30.41	30.26
	sd	2.81	3.71	4.02	4.76
Experimentation	*m*	32.49	30.23	32.44	32.16
	sd	4.68	4.62	4.93	4.46
Reflection	*m*	36.43	32.20	34.80	34.00
	sd	3.94	4.58	4.52	4.82
Integration	*m*	31.51	30.13	32.81	33.83
	sd	4.94	4.69	4.35	4.76
Survival #	*m*	31.97	31.18	30.98	30.61
	sd	2.59	3.77	4.02	4.63
Growth ##	*m*	33.48	30.85	33.35	33.33
	sd	4.01	4.00	4.00	4.03
Total	*m*	164.37	154.90	162.02	161.21
	sd	13.41	16.46	16.94	18.01

Key: *m* : Mean
sd : Standard deviation
\# : Mean of Perplexity and Control Anxiety (converted scores)
: Mean of Experimentation, Reflection and Integration

Fig. 6.8 Perceived Competence in Teaching: Mean Survival and Growth Scores for Primary Teachers

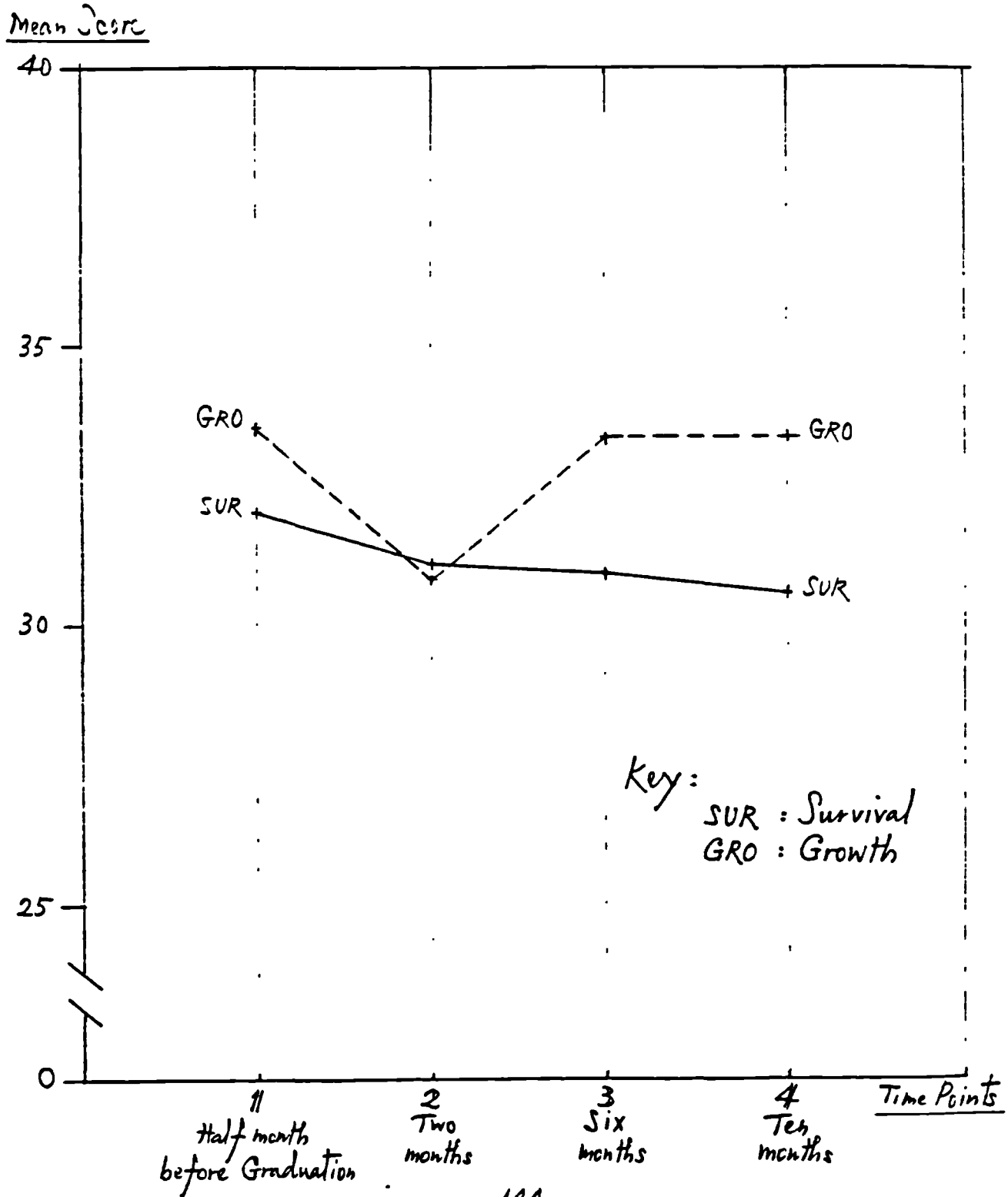
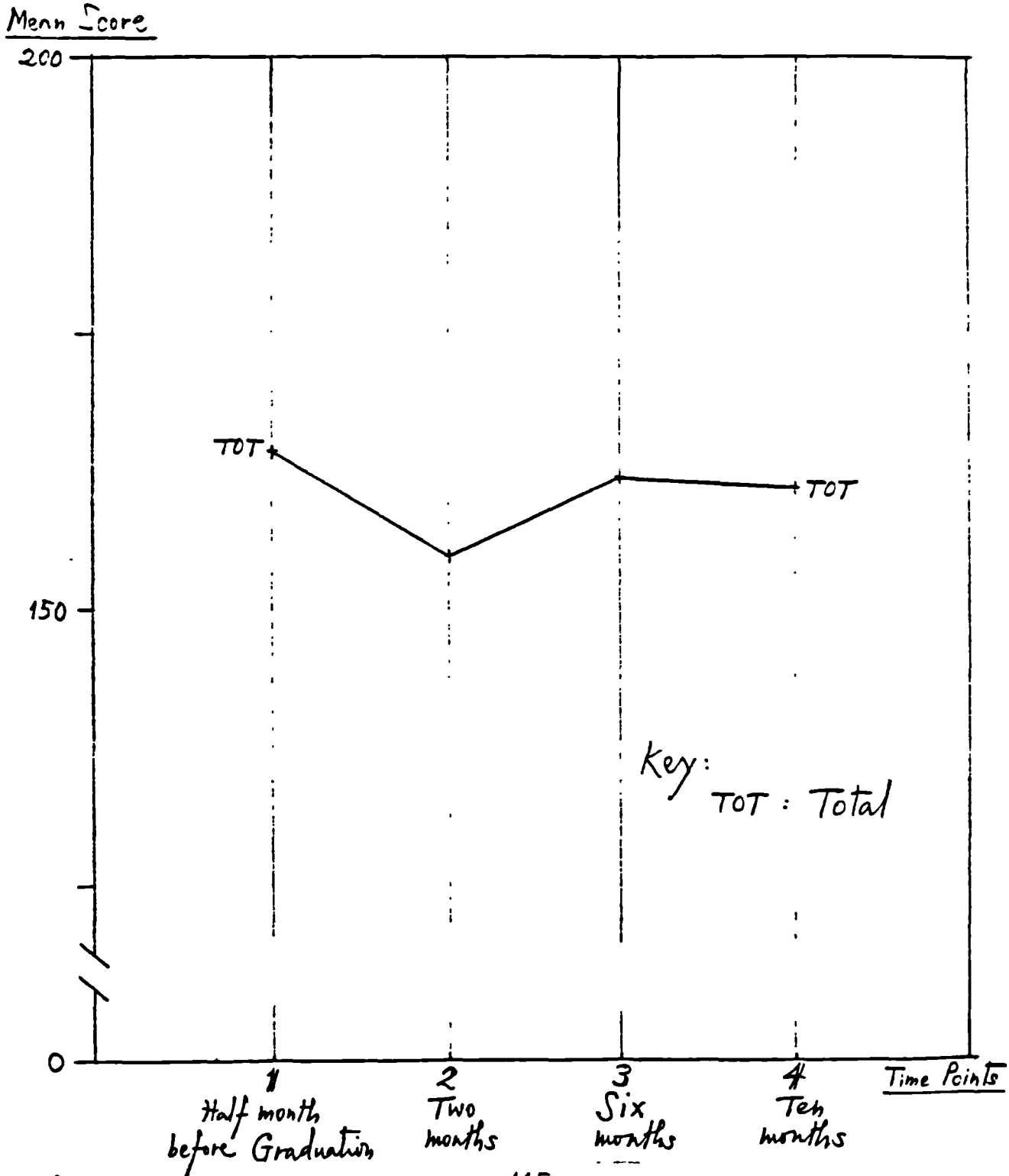


Fig. 6.9 Perceived Competence in Teaching: Mean Total Scores for Primary Teachers



C. The Secondary Subgroup

As shown in Fig. 6.10 (ref. p.148), all five states (ref. Table 6.6, p.149) decrease from TP1 to TP2 ranging from the most obvious decrease in Reflection to the smallest decrease in Control Anxiety. Situations between TP2 and TP3 are more varied: with relatively smaller increase in Reflection and Integration, but decrease in the other three states. The picture of change is thus less clear. Similarly, changes from TP3 to TP4 are minimal in comparison with those of the same states from Tp1 to TP2.

Reflection as is found in Fig. 6.4 (p.132) for the whole group, is distinctly higher than all other states while Control Anxiety is lower than others at all times.

In Fig. 6.11 (ref. p.150), the mean 'Survival' state (ref. Table 6.6, p.149) decreases gradually from TP1 to TP3 and increases slightly from TP3 to TP4. But the general variations among all means are relatively small.

The mean Growth line shows a more distinct drop from TP1 to TP2. From TP2 to TP4, the score gradually increases but, again, the magnitude is very small.

As a summary of the previous two levels of analyses, Fig. 6.12 (p.151) shows the trend line for the mean Total scores for the secondary subgroup from TP1 to TP4. The decrease from TP1 to TP2 is of a magnitude greater than any other variations between TP2 to TP4. Thus it is possible to conclude that there is a decrease in the general PCT of the secondary subgroup from TP1 to TP2. From TP2 to TP4, they remain at about the same level of

PCT as that at TP2.

Like the primary subgroup, the simple main effects of the secondary subgroup across all time points were extracted from the ANOVA tables for the whole group (ref. Appendix Tables A16.1 to A16.8, p. 315 - 322) to produce the Tables A16.10 - A16.17, p. 324 - 330).

A separate set of Tukey tests was calculated to test the significance of differences between mean scores of adjacent time points in all five states, the mean Survival and Growth states and mean Totals The results are summarised in Appendix 16, Table A16.19, p. 332 .

From this Table A16.19, it can be seen that Reflection and mean Growth state decrease significantly in the Familiarization Phase (TP1 to TP2) with a tendency of negative shift in other items in the same period judging from the q-value signs. Changes in the mean scores for all items are insignificant from TP2 to TP4, a possible indication of a consistently low level of PCT with a distinct downward shift from TP1 to TP2.

Fig. 6.10 Perceived Competence in Teaching: Mean Scores for Each State for Secondary Teachers

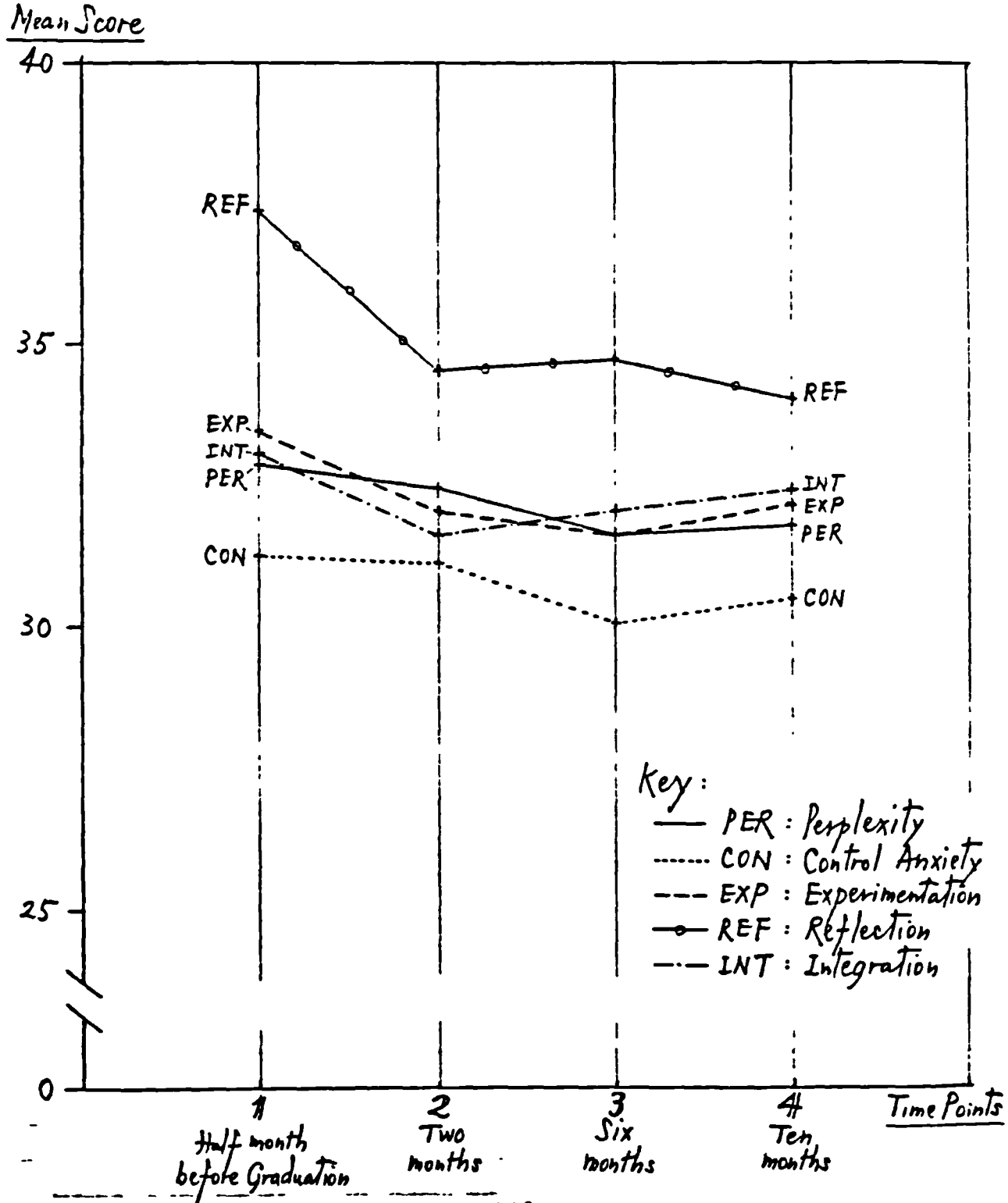


Table 6.6

Means and standard deviations of Five states, Survival and Growth states and totals
(Secondary Subgroup)

		Time Point 1	Time Point 2	Time Point 3	Time Point 4
Perplexity	*m*	32.91	32.48	31.62	31.82
	sd	5.16	4.86	5.75	4.88
Control Anxiety	*m*	31.28	31.19	30.12	30.44
	sd	3.92	4.40	4.51	4.44
Experimentation	*m*	33.47	32.00	31.62	32.17
	sd	3.67	4.12	4.79	4.85
Reflection	*m*	37.37	34.44	34.68	33.99
	sd	3.99	3.67	4.79	4.85
Integration	*m*	33.01	31.68	32.02	32.41
	sd	3.92	4.43	4.95	4.14
Survival #	*m*	32.10	31.83	30.87	31.13
	sd	4.18	4.12	4.77	4.25
Growth ##	*m*	34.62	32.71	32.77	33.86
	sd	3.32	3.56	4.21	3.84
Total	*m*	168.05	161.79	160.06	160.83
	sd	14.92	15.04	18.08	16.05

Key: *m* : Mean
sd : Standard deviation
\# : Mean of Perplexity and Control Anxiety (converted scores)
: Mean of Experimentation, Reflection and Integration

Fig. 6.11 Perceived Competence in Teaching: Mean Survival and Growth Scores for Secondary Teachers

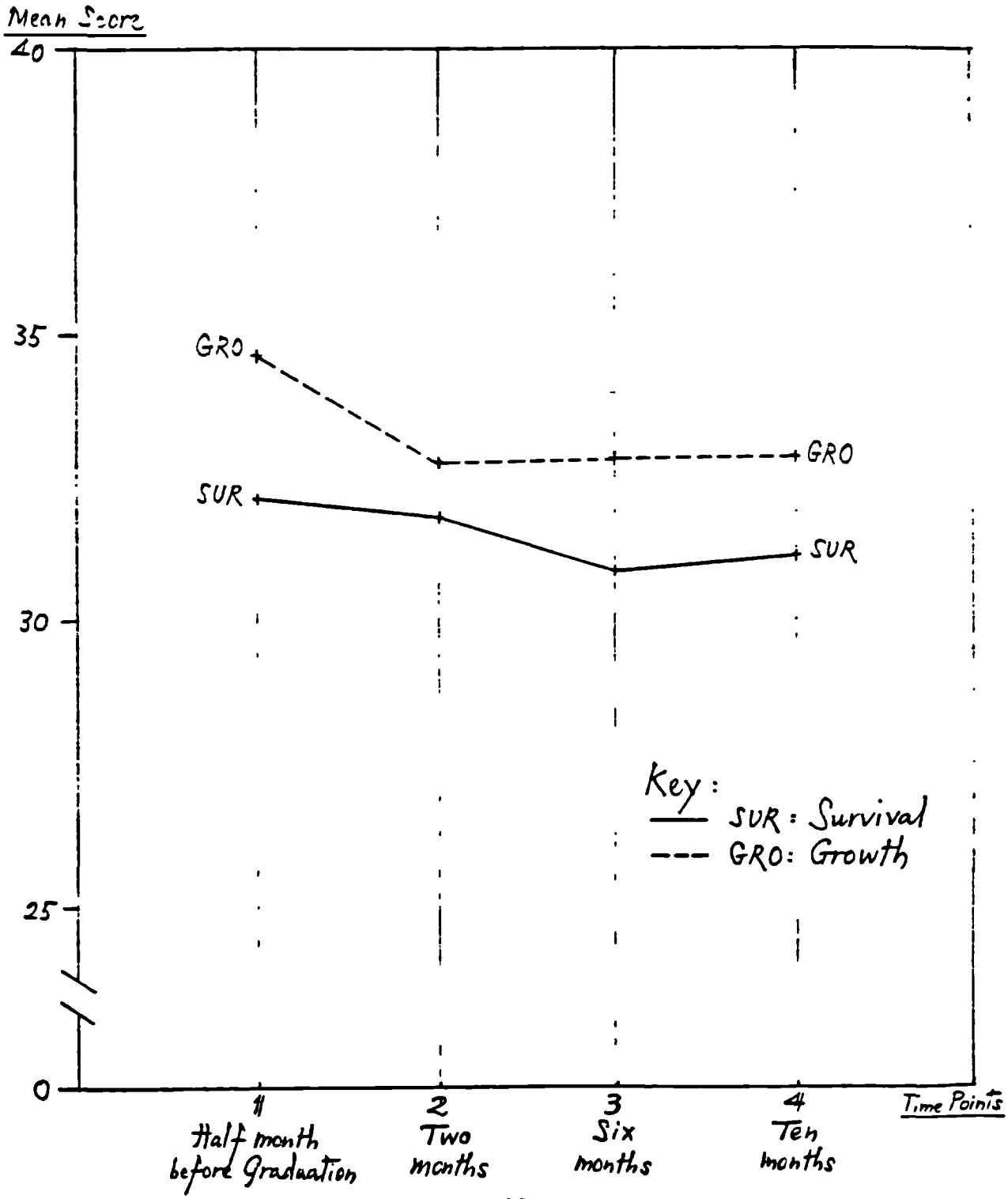
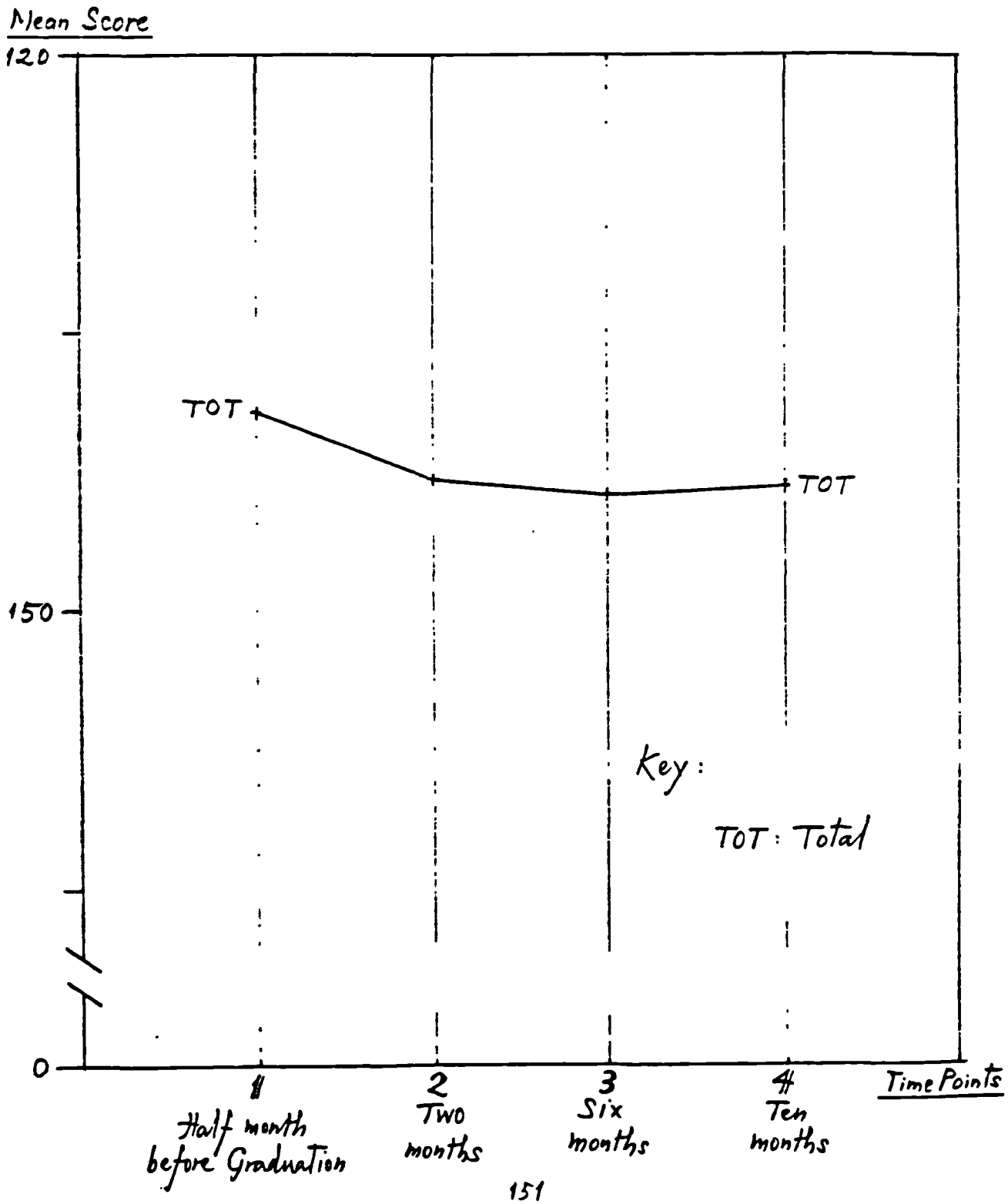


Fig. 6.12 Perceived Competence in Teaching: Mean Total Scores for Secondary Teachers



D. Comparing Patterns of Change in Primary and Secondary Subgroups

To search for the possibility that there exist differences between the patterns of change demonstrated by the primary and secondary subgroups, mean scores for all five states, the Survival and Growth means and the total competence means are to be compared over the four time points. A two-way analysis of variance of level by time is conducted for each of the items mentioned above. The two-way ANOVA might be expected to show that interaction effects between level and time in any of the items separately for the primary and secondary subgroups.

The results of these analyses are summarized and listed in Appendix 16 (ref. Tables A16.10 - A16.17, p. 324 - 330).

In Table A16.5 and Table A16.7 (p. 319 & 321), there was a significant (0.05) difference between the primary and secondary subgroups in 'level by time' interaction for Integration and in the mean 'Growth' state.

There are therefore significant differences between the primary and the secondary subgroups in these two aspects and further tests are required to locate when they occur.

From Tables A16.20 and A16.21 (p. 333 & 334), the level/time interaction effects for Integration and Growth reveal that the primary and secondary subgroups follow different patterns of change in PCT at TP3 and TP4. (ref. also Fig. A16.1 & A16.2, p. 315 & 316).

E. General Conclusions:

The detailed findings from the whole group and the primary and secondary subgroups suggest the following generalisation about the patterns of change in PCT across the time points:

(1) For the whole group, there is a significant general decrease in the PCT from half month before their graduation to the second month of their teaching as reflected in the significant change in the grand totals. The states decreasing significantly in this period were the Experimentation, Reflection and Integration, and it was also true for the mean 'Growth' state.

(2) For the whole group, changes of PCT in all states, the mean growth and grand totals were insignificant from the second month through the sixth to the tenth month of teaching.

(3) If the findings are referred to the model on the process of learning to teach (p.85), it seems that, for these teachers, the general PCT pattern for the whole group forms a route 'sliding' down a slope to a 'trough', 'walking' up a very gently inclined slope and onto a nearly level plane. This is very similar to the postulated curve of '1 - 2a - 3a', a pattern implying a poor adaptation to development because of the decreasing trend in the PCT. In general, the postulated 'reality shock' phenomenon was supported by the findings in the whole group.

(4) For the primary subgroup, besides the significant decrease

in mean Growth and Reflection from the half month before graduation to the second month of teaching, there were significant increases in Reflection, Integration and mean Growth from the second month to the sixth month. Changes in all items were insignificant from the sixth month to the tenth in this subgroup.

(5) The mean growth curve of PCT for the primary subgroup can significantly illustrate one of the postulated development curves in the Model (ref. Fig. 4.4, p.85): a downward movement ressembling a 'landslide' to the 'trough'; then an 'uphill climbing' to a level similar to the level at which they started the 'trip' and finally to a 'plateau' at which they might have found a safe land to 'settle' (cf. Curve in model: '1 - 2b - 3b', Fig. 4.4). Since this analogy was verified, those who care for beginning teachers' growth should feel uneasy because 'getting' to a 'plateau' so soon the process of learning to teach for a first year probationer is disappointing or at best unsatisfactory.

(6) For the secondary subgroup, besides the significant decrease in Reflection and mean Growth means from half month before their graduation to the second month, no significant changes in PCT were found throughout the rest of the year, maintaining the lower level recorded at the second month.

(7) Comparing the pattern postulated in the model with that found in the secondary subgroup, it followed the pattern of '1 - 2a - 3a' (see Fig. 4.4, p. 85): dropped from TP1 to TP2, continued to move 'downhill' till TP3 and kept the similar level

by the end of the year at TP4, a pattern similar to the whole group found in (3).

(8) From the ANOVA analysis, the disordinal interactions of the primary and secondary subgroups in Integration and mean Growth indicated that the two subgroups were different in patterns of change in PCT in Integration and mean Growth after the second month of teaching at TP3 and TP4.

(9) In the whole group and the subgroups, the Survival states of Perplexity and Control Anxiety were insignificant in change across all time points.

Overall, the phenomenon of 'reality shock' was located at the end of the second month of first year teaching and was portrayed by the significant lowering in general perceived competence in teaching (PCT). The pattern of change in PCT postulated in the model on the process of learning to teach was supported by the findings from the whole group and was more clearly illustrated by the interplay of the states in findings from the subgroups.

Part III: The Longitudinal Study

Introduction

Of the 365 teachers who responded at least at one time point of the study in this research, only 15 consistently responded throughout the four time points.

These 15 form a unique group of beginning teachers providing data for a genuine longitudinal study.

Following the findings of the cross-sectional analyses, the concepts of dominant states and modal states are not pursued. This analysis is based on mean scores, and is designed in a similar way to that for the cross-sectional study reported in Part II, thus facilitating comparison.

A. The Whole Longitudinal Group

To check the significance of variations by level and by time in each of the five states, the Survival and Growth states and the totals, the 2 x 4 analyses of variance with repeated measures were computed (ref. Appendix 17, Tables A17.1 to A17.8, p. 335 - 342). The two levels were the primary and the secondary; and, the four time points were June 90 (half month before graduation), October 90 (second month of teaching), February 91 (sixth month of teaching) and June 91 (tenth month of teaching).

From Tables A17.1 to A17.8 (p. 335 to 342), the time dimensions of Experimentation (Table A17.3), Reflection (Table A17.4), Integration (Table A17.5), mean Growth (table A17.7) and the Total (Table A17.8) were statistically significant at 0.05 level while all Survival states were not.

By using the Tukey method to check the specific time points where the significant changes have occurred, the results are summarized in Table A17.9 (p. 343). In the Familiarization Phase from TP1 to TP2, Experimentation, Reflection, mean Growth , and Total all decreased significantly, and in the Adjustment Phase from TP2 to TP3, only Integration increased significantly though the other growth states and Total were close to the critical value and with the same direction of change as indicated by the same signs in the q-values. All growth states and total were not statistically significant during the Stabilization Phase from TP3 to TP4.

The general pattern of change in PCT for the Total is possibly read as an initial significant decrease followed by a possible increase to time point three after which there was still a possible increase but of smaller magnitude.

The mean Growth state scores were closely in line with the total scores, implying that the mean Growth state score might be a strong indicator for the trend of change in PCT.

The consistent lack of significance of differences in all Survival states, Perplexity and Control Anxiety, throughout the year might mean that the intensities of perplexity or anxiety or control were persistently kept at the similar level.

Using the means in Table 6.7 (p.159) for the whole longitudinal group, the findings are graphically displayed in Fig. 6.13 (p. 160).

It is obvious that the three Growth states of Experimentation, Reflection and Integration decrease more considerably than the two Survival states from TP1 to TP2; from the statistical test results presented in the previous section (ref. Table A17.9, p.343), the steeper two changed significantly. Between TP2 and TP3, the steepest increasing line of Integration was the only significant item in this time period. For the third period, none were significantly changing from TP3 to TP4.

From Fig. 6.13(B), as verified in Table A17.9, the mean Growth decreases significantly from TP1 to TP2, increases less steeply from Two to three and still less steeply to Four.

Fig. 6.13(C) is for the total. As verified statistically, it is very similar to the pattern of mean Growth in Fig. 6.13(B).

All Survival states and subsequently their mean are not changing much throughout the year, showing more levelling lines than all others in Fig. 6.13.

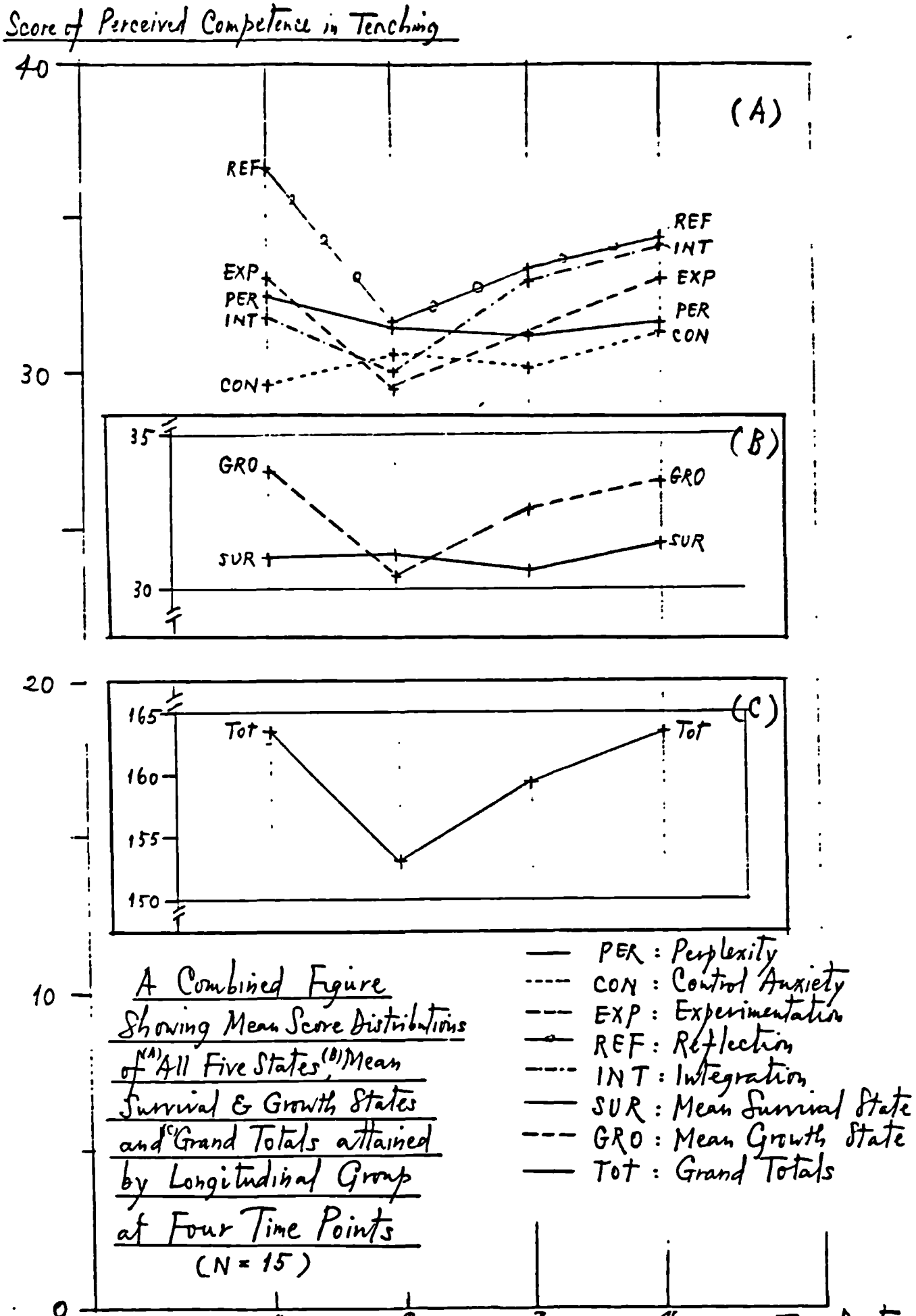
Table 6.7

Means and standard deviations of Five states, Survival and Growth states and totals
(Whole Longitudinal Group)
($N = 15$)

		Time Point 1	Time Point 2	Time Point 3	Time Point 4
Perplexity	*m*	32.40	31.53	31.20	31.67
	sd	3.02	4.70	3.51	5.00
Control Anxiety	*m*	29.60	30.53	30.13	31.27
	sd	3.54	5.64	3.96	5.50
Experimentation	*m*	33.00	29.47	31.27	31.93
	sd	5.00	4.81	5.01	4.74
Reflection	*m*	36.60	31.67	33.33	34.33
	sd	4.61	5.74	5.08	4.92
Integration	*m*	31.80	30.00	33.00	34.13
	sd	5.35	5.55	3.76	3.80
Survival #	*m*	31.00	31.03	30.67	31.47
	sd	3.10	4.90	3.53	4.88
Growth ##	*m*	33.80	30.38	32.53	33.47
	sd	4.58	4.73	4.17	3.96
Total	*m*	163.40	153.20	158.93	163.33
	sd	16.84	21.36	18.08	19.89

Key: *m* : Mean
sd : Standard deviation
\# : Mean of Perplexity and Control Anxiety (converted scores)
: Mean of Experimentation, Reflection and Integration

Fig. 6.13



A Combined Figure Showing Mean Score Distributions of (A) All Five States (B) Mean Survival & Growth States and (C) Grand Totals attained by Longitudinal Group at Four Time Points (N = 15)

B. The Primary Longitudinal Subgroup

By extracting the simple main effects results for the primary subgroup from Tables A17.1 to A17.8 (p. 335 - 342), the Tables A17.10 to A17.17 were derived (ref. p. 344 - 347) with a separate set of Tukey strategies used to locate specific time points at which the significant changes had occurred (ref Table A17.18, p. 348).

shows that
Table A17.18 Reflection and mean Growth decreased significantly from TP1 to TP2 and Integration increased significantly from TP2 to TP3. Judging from the signs of the q-values, there was a general tendency of decrease in all items between TP1 and TP2, an increase between TP2 and TP3 and a decrease of smaller magnitude from TP3 to TP4.

Referring to Table 6.8 (p.163) and Fig. 6.14 (p.164), the general patterns of change in PCT are discussed in three aspects in the following.

shows that
Fig. 6.14 (A) all growth states decreasing from TP1 to TP2 more distinctly than the two Survival states; and the steepest decrease, Reflection, was found as a significant change of this period. Integration, the line with the sharpest increase during the period between TP2 and TP3, was the significant one picked out by the Tukey test. Though q-values for all items between TP3 and TP4 failed to exceed the critical value, their signs have revealed a possible slow increase.

In Fig. 6.14 (B), the most obvious change is that the mean Growth decreased significantly from TP1 to TP2. Though all items have increased from TP2 to TP4, the magnitude was not large enough

to reach significance in the Tukey Tests.

Fig. 6.14(C) shows that the total curve is closely similar to the Growth states in the movements through all time points, no significant changes were detected. The 'trough' in the graph has been confirmed by the significant decrease in Growth state (TP1→TP2) followed by the significant increase in Integration (TP2→TP3).

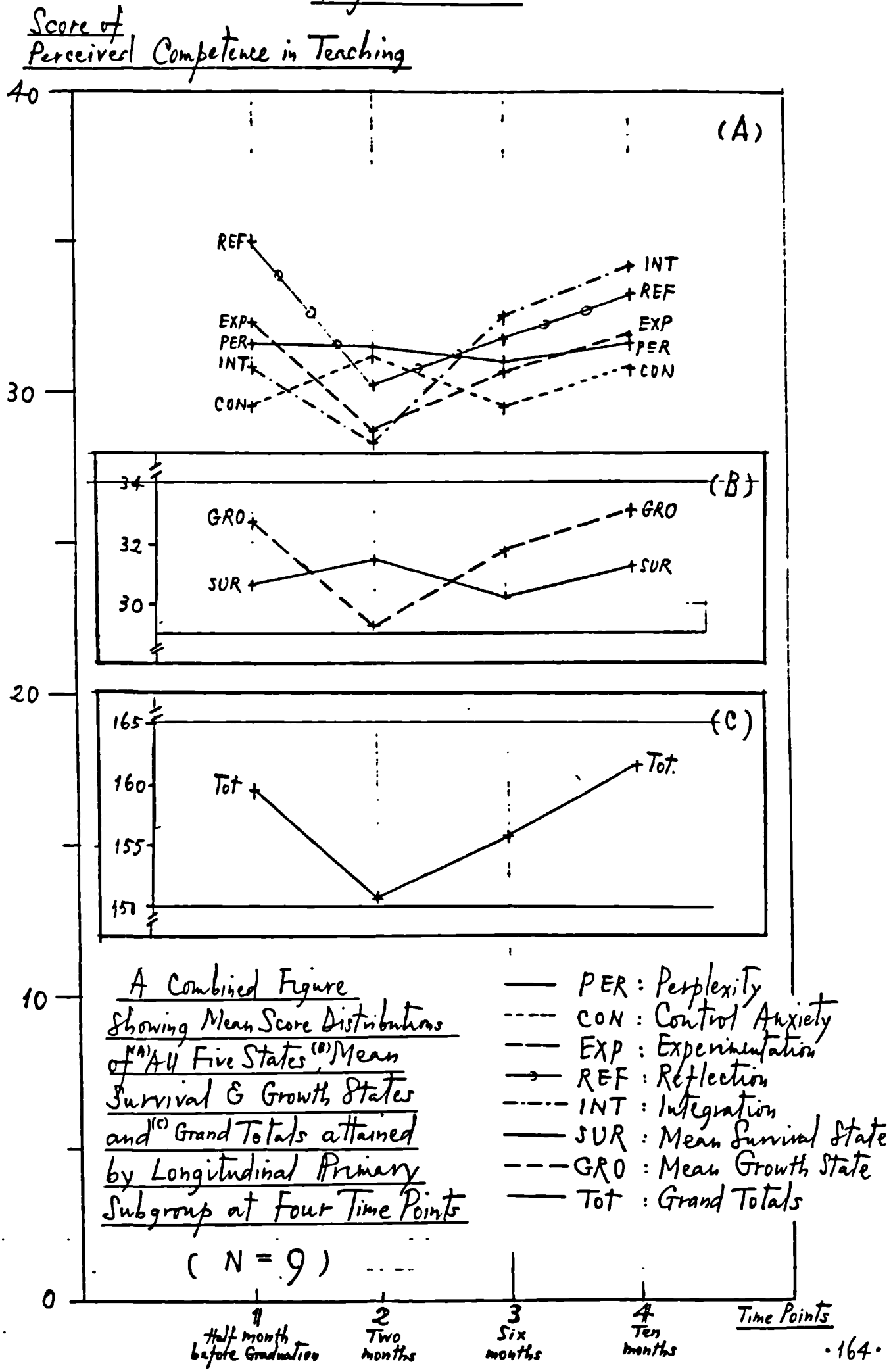
Table 6.8

Means and standard deviations of Five states, Survival and Growth states and totals
(Primary Longitudinal Group)
(N = 9)

		Time Point 1	Time Point 2	Time Point 3	Time Point 4
Perplexity	m	31.67	31.56	31.00	31.67
	sd	1.41	3.71	2.87	5.50
Control Anxiety	m	29.56	31.11	29.56	30.89
	sd	2.30	4.83	4.13	4.86
Experimentation	m	32.22	28.89	30.78	31.89
	sd	6.26	5.90	5.63	6.03
Reflection	m	35.00	30.11	31.89	33.22
	sd	4.74	6.27	5.95	5.63
Integration	m	30.89	28.44	32.56	34.11
	sd	5.58	5.46	4.03	2.93
Survival #	m	31.61	31.33	30.28	31.28
	sd	1.52	3.72	3.26	4.72
Growth ##	m	32.70	29.15	31.74	33.07
	sd	5.19	5.22	4.84	4.66
Total	m	159.33	150.11	155.78	161.78
	sd	16.75	20.41	19.43	21.48

Key: m : Mean
sd : Standard deviation
: Mean of Perplexity and Control Anxiety (converted scores)
: Mean of Experimentation, Reflection and Integration

Fig. 6.14



A Combined Figure Showing Mean Score Distributions of (A) All Five States, (B) Mean Survival & Growth States and (C) Grand Totals attained by Longitudinal Primary Subgroup at Four Time Points

(N = 9)

C. The Secondary Longitudinal Subgroup

To the Tables of simple main effects for the subgroups (ref. Tables A17.10 to A17.17, p. 344 - 347), Tukey tests for significant changes at specific time points were administered and results were summarized in Table A17.19 (p. 348).

Table A17.19 shows that Reflection and mean Growth decreased significantly from TP1 to TP2. The magnitude and signs of the q-values suggest a sharp decrease in PCT between TP1 and TP2, a 'gentler' increase between TP2 and TP3 and a relatively negligible change between TP3 and TP4.

With reference to Table 6.9 (p.166) and Fig. 6.15 (p.167) the distribution patterns of PCT for the five states, the Survival and Growth means and totals are graphically presented.

In Fig. 6.15 (A), all growth states and Perplexity decrease from TP1 to TP2, particularly in Experimentation and Reflection; and, by the Tukey tests (Table A17.19, p. 348), Reflection was significant in change. For the rest of the changes from TP2 to TP4, there seemed to be in an increasing trend but the magnitude was negligible. It could be interpreted as maintaining a level of PCT relatively similar to that attained at TP2, the lowest point among the four time points for all states.

In Fig. 6.15 (B), as previously found, the mean Survival scores are relatively much more level than the mean Growth across the time points; and, by Tukey tests, the mean Growth was changing significantly only between TP1 and TP2. The mean Growth is also consistently higher than the Survival at all time points.

In Fig. 6.15 (C), as a summative index, the grand total of

this secondary longitudinal subgroup can grossly reflect the general trend of change highlighted for the whole group: a steeper decrease in the Familiarization Phase, then a 'gentler' increase in the Adjustment Phase and finally a relatively negligible increase in the Stabilization Phase; and, by the Tukey tests, none was significant.

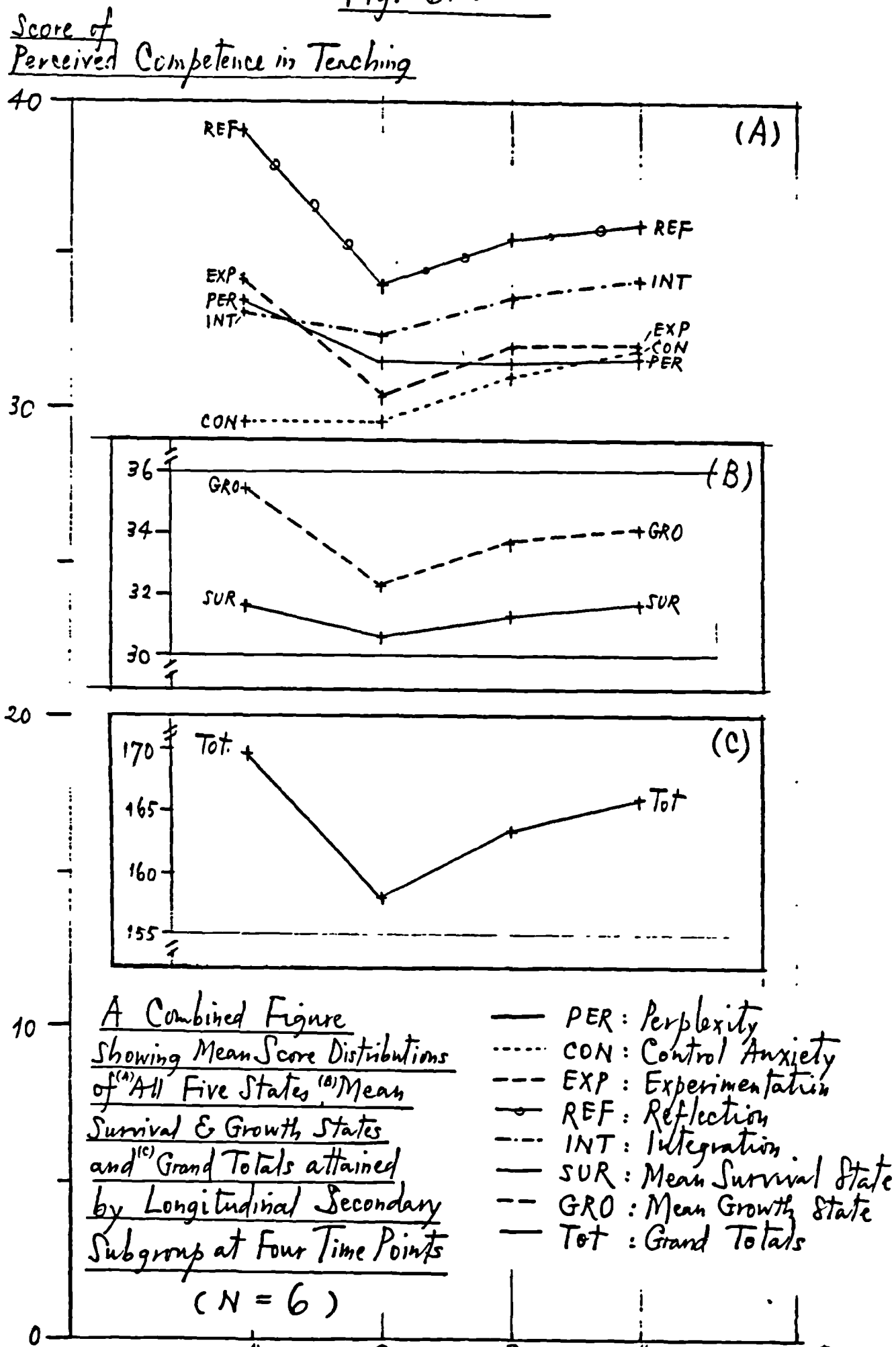
Table 6.9

Means and standard deviations of Five states, Survival and Growth states and totals
(Secondary Longitudinal Group)
(N = 6)

		Time Point 1	Time Point 2	Time Point 3	Time Point 4
Perplexity	m	33.50	31.50	31.50	31.67
	sd	4.46	6.32	4.59	4.63
Control Anxiety	m	29.67	29.67	31.00	31.83
	sd	5.16	7.09	3.90	6.79
Experimentation	m	34.17	30.33	32.00	32.00
	sd	2.14	2.73	4.29	2.19
Reflection	m	39.00	34.00	35.50	36.00
	sd	3.46	4.29	2.51	3.41
Integration	m	33.17	32.33	33.67	34.17
	sd	5.15	5.28	3.56	5.15
Survival #	m	31.58	30.58	31.25	31.75
	sd	4.75	6.68	4.16	5.54
Growth ##	m	35.44	32.22	33.72	34.06
	sd	3.18	3.51	2.90	2.90
Total	m	169.50	157.83	163.67	165.67
	sd	16.47	23.84	16.33	18.96

Key: m : Mean
sd : Standard deviation
: Mean of Perplexity and Control Anxiety (converted scores)
: Mean of Experimentation, Reflection and Integration

Fig. 6.15



A Combined Figure Showing Mean Score Distributions of (A) All Five States (B) Mean Survival & Growth States and (C) Grand Totals attained by Longitudinal Secondary Subgroup at Four Time Points

(N = 6)

D. General Conclusions: The Longitudinal Study

Summarizing all findings in Section A with graphical illustrations in Section B, the general conclusions from the longitudinal study are as follows:

(1) For the whole group, there was a significant general decrease in PCT between TP1 and TP2. Significant decreases were also detected in Experimentation, Reflection and the mean Growth state scores in the same period;

(2) Between TP2 and TP3, only the Integration state increases significantly for the whole group;

(3) For the whole group, there were no significant changes in any of the items from TP3 to TP4;

(4) The general pattern for the whole group follows the pattern of '1 - 2a - 3a' as postulated in the model though there was an increase in Integration between TP2 and TP3 and thus one of the the model patterns was supported;

(5) For the primary subgroup, besides the significant decrease in PCT in Reflection and mean Growth between TP2 and TP3, there was a significant increase between TP2 to TP3, but no significant changes in any item between TP3 and TP4;

(6) The pattern of change in PCT in the primary subgroup suggests a mean Growth pattern forming a profile of '1 - 2a - 3a' similar to that of the whole group found in (4);

(7) For the secondary subgroup, there were significant decreases in Reflection and mean Growth between TP1 and TP2; but none for all items between TP2 to TP4;

(8) Again, the pattern of change in mean Growth for the secondary group followed the line '1 - 2a - 3a' as found in other groups; and

(9) Perplexity, Control Anxiety and the mean 'Survival' were all insignificant in change in any group and at any time point.

Summing up, the 'reality shock' phenomenon was located at TP2 as shown in the significant lowering in general PCT of the whole group; a pattern of change in PCT across the time points for the whole group was in line with a postulated pattern in the model.

Part IV: Patterns of Change in the Cross-sectional and the Longitudinal Studies

A. General Patterns of change in the Perceived competence in Teaching: A Concluding Remark

A comparison of Tables 6.10 and 6.11 (ref. p. 172 - 173) suggests that nearly all significant changes in the cross-sectional studies are supported by the findings from the longitudinal studies which were composed of respondents participating the research at all four time points.

Identical significant changes for the two whole groups were in a) the mean Total between time point One and Two, b) mean Growth between One and Two, and c) the Growth states of Experimentation and Reflection between One and Two. The trends of change across all time points in Reflection, mean Growth and mean Total were also identical as far as the signs of q-values were concerned.

For the two primary subgroups, identical significant changes were in a) Reflection and mean Growth between time point One to Two , b) Integration between time point Two and three, and c) the trends of change throughout the year were identical for Integration.

For the secondary subgroups, the identical significant changes were Reflection and mean Growth between time point One and Two. The trends of change for mean Growth across all time points were also identical.

Throughout all time points for all groups, it is clear that Reflection and mean Growth were all significantly de-

creasing from TP1 to TP2, the Familiarization Phase in the model of learning to teach.

The generally smaller variations in Perplexity and Control Anxiety and subsequently the mean Survival state scores will have to be more closely examined in the analysis of BTVQ in the next chapter.

In conclusion, judging from the results of comparisons presented in the previous paragraphs, the BTDQ findings in the cross-sectional study are generally similar to those of the longitudinal study. So, it is possible to conclude that the patterns of change across the time points can be accepted as reflecting the possible changes in the ideal longitudinal study of the whole sample of beginning teachers.

Table 6.10

Summary Table to show the distribution of Tukey test results of adjacent pairs of Time Points in All Five States, mean Survival and Growth States and Mean Totals for the Whole Group, the Primary and the Secondary Subgroups in Cross-sectional Study

(Adapted from Tables A16.9, p.323, Table A16.18, p.331, and Table A16.19, p.332)

Group	Whole			Primary			Secondary		
Time Points	1 to 2	2 to 3	3 to 4	1 to 2	2 to 3	3 to 4	1 to 2	2 to 3	3 to 4
Five States									
Perplexity	-ℓ	-	-	-	-	-	-	-	-
Control Anxiety	-	-	-	-	-	-	-	-	-
Experimentation	V*	V	A	V	V	A	V	V	A
Reflection	V*	A	V	V*	A*	V	V*	A	V
Integration	V*	A	A	V	A*	A	-	-	-
Mean Survival	-	-	-	-	-	-	-	-	-
Mean Growth	V*	A	A	V*	A*	V	V*	A	A
Mean Total	V*	A	A	-	-	-	V	V	A

Legend:

ℓ : Not Applicable (Insignificant in simple main effects checks)

V : Insignificant q-value with a decreasing tendency (X1 - X2 > 0)

A : Insignificant q-value with an increasing tendency (X1 - X2 < 0)

V* : Significantly decreasing

A* : Significantly increasing

Time Point 1 : Half month before graduation
Time Point 2 : Two months in full-time teaching
Time Point 3 : Six months in full-time teaching
Time Point 4 : Ten months in full-time teaching

Table 6.11

Summary Table to show the distribution of Tukey tests results of adjacent pairs of Time Points in All Five States, mean Survival and Growth States and Mean Totals for the Whole Group, the Primary and the Secondary Subgroups in the Longitudinal Study

(Adapted from Tables A17.9, p.343, Table A17.18, p.348 and Table A17.19, p.348)

Group	Whole			Primary			Secondary		
Time Points	1 to 2	2 to 3	3 to 4	1 to 2	2 to 3	3 to 4	1 to 2	2 to 3	3 to 4
Five States									
Perplexity	- @	-	-	-	-	-	-	-	-
Control Anxiety	-	-	-	-	-	-	-	-	-
Experimentation	V*	A	A	-	-	-	-	-	-
Reflection	V*	A	A	V*	A	A	V*	A	A
Integration	V	A*	A	V	A*	A	-	-	-
Mean Survival	-	-	-	-	-	-	-	-	-
Mean Growth	V*	A	A	V*	A	A	V*	A	A
Mean Total	V*	A	A	V	A	A	-	-	-

Legend:

@ : Not Applicable (Insignificant in simple main effects checks)

V : Insignificant q-value with a decreasing tendency (X1 - X2 > 0)

A : Insignificant q-value with an increasing tendency (X1 - X2 < 0)

V* : Significantly decreasing

A* : Significantly increasing

Time Point 1 : Half month before graduation
Time Point 2 : Two months in full-time teaching
Time Point 3 : Six months in full-time teaching
Time Point 4 : Ten months in full-time teaching

B. Summary Statements on the Patterns of Change in Perceived Competence in Teaching concluded from the BTDQ Study

The summary statements for the general BTDQ findings on PCT are listed as follows:

1. For the whole group of beginning teachers, there was a general decrease in their perceived competence in teaching scores from half a month before their graduation from the colleges of education to the end of the second month of their full-time teaching in either the primary or the secondary schools; thus, the 'reality shock' phenomenon as defined in the research was located.

2. For the whole group of beginning teachers, there is a decrease in their perceived competence in teaching with reference to the three states of Experimentation, Reflection and Integration from half month before their graduation from the colleges of education to the end of the second month of their full-time teaching; with these findings, the characteristics of the 'reality shock' were more clearly shown as principally caused by the decrease in the 'Growth' states.

3. For the whole group of beginning teachers, there is no significant difference in their perceived competence level in the states of Perplexity and Control Anxiety throughout the whole period of the research. Thus, the persistent set of 'Survival' states identified across all time points would portray a picture of 'reality shock' and general pattern of change in PCT in terms of the interplay of two set of elements: the 'Growth' and the 'Survival' in different groups and at different time.

4. For the Whole group of beginning teachers, only their perceived competence level in the state of Integration increase significantly from the second month to the sixth month of their first year teaching.

5. Between the sixth month and the tenth month in their first year teaching, there is no significant changes in the perceived competence level in all the five states;

6. For the primary beginning teachers, beside the significant lowering of perceived competence in Reflection and mean Growth from half month before their graduation to the second month of teaching, their level of perceived competence in teaching in Reflection, Integration and mean Growth increase significantly from the second month to the sixth month in their first year teaching;

7. For the secondary beginning teachers, besides their significant decrease in the mean growth and Reflection from half month before their graduation from the colleges of education to the second month of teaching, there is no significant change of level of perceived competence in teaching since the second month of their first year teaching.

More elaboration on these findings will be given in the next chapter on the qualitative findings of the research; an overall concluding section on findings will subsequently be presented.

CHAPTER SEVEN

TEACHERS' REPORTS OF EXPERIENCE IN THE FIRST YEAR

Part I: Responses to the Beginning Teachers' Views Questionnaire (BTVQ)

A. The Most Important Events or Difficulties encountered

Introduction

While the findings in the previous chapter offered support to the research model, a complementary exploration was designed by using data from teachers' reports of their experience in the first year obtained from a second questionnaire, the Beginning Teachers' Views Questionnaire (BTVQ) (Appendix 2, p. 269). This was administered to a smaller sample than was the first questionnaire (see p. 109 in Chapter 5): e.g. it was sent with the BTDQ at TP2 to all respondents of TP1 only. Similarly for TP3 and TP4.

In this questionnaire, the first item (A) asked for a listing of the events that the beginning teachers regarded as the most important or the difficulties they met at different time points in the first year of teaching. The next item (B) asked for fur er elaboration on two of these events or difficulties on the frequencies, the conditions, the attempts to solve them, the consequences and the experience gained. In what follows, summaries of events or difficulties collected from the first item (A) are discussed with reference to the whole group and the primary

and secondary subgroups separately at each time point of the research. Data from the second item (B) are held for a separate study on the general working conditions of beginning teachers and are not reported in this research.

1. The whole group

Responses to the request to list difficulties/problems were classified with close reference to the scheme based on Veenman's work presented on p. 42-43.

Table 7.1 (ref. p.178) is the summary of responses of the fifteen most important events or difficulties encountered by respondents of the whole group at TP2 to TP4.

According to Vonk (Vonk, 1983; also ref. p. 49), within the first five or six months, beginning teachers' perceived problems are mainly at the micro-level, concerned with the teachers' own and the pupils' decisions and activities in classroom or in school, and less at the macro-level, concerning the school authority, colleagues and parents. As observed from Table 7.1 the ratio of micro-level events to macro-level events is 12 to 3 or 4:1, a clear indication that the beginning teachers concentrated mainly on matters of immediate importance to them.

Table 7.1

Summary Table of the Most Important Events/Difficulties encountered by the Whole Group of Beginning Teachers

Events/Difficulties	Ranking at TP2	TP3	TP4	(1)	(2)	(3)
Maintaining classroom discipline	1.5	2	2	I	P	P
Insufficient lesson preparation time	1.5	1	3	I	S	T
Arousing pupils' interest and attention	3	6.5	5.5	I	P	P
Heavy marking load	4	3	4	I	S	T
Demanding Administrative requirements	5	8.5	13.5	A	S	O
Insufficient teaching materials	6	15	15	I	S	T
Dealing with individual differences	8.5	4	8	I	P	P
Heavy workload	8.5	6.5	5.5	I	S	T
Obtaining pupils' assignments	8.5	- *	10	I	P	P
Handling problem pupils	8.5	12.5	1	I	P	P
Maintaining relations with colleagues	11.5	12.5	12	A	P	O
Covering syllabus as standardized for all	11.5	-	-	I	S	T
Organizing extracurricular activities	13	5	7	A	S	P
Ineffective teaching methods	14	10	13	I	S	P
Unreasonably high load of non-teaching duties	15	-	-	I	S	T
Catering for individual pupils' needs	-	8.5	-	I	P	P
Inadequate school facilities	-	12.5	-	A	S	O
Relations with parents	-	12.5	11	A	P	O
Relations with school authorities	-	-	9	A	P	O
Ratios :- I : A	12:3	10:5	10:5			
S : P	9:6	8:7	7:8			
T : P : O	6:7:2	4:7:4	4:7:4			

* : Not included in the top 15 events/difficulties of the time point

(1) Level: ref. Vonk (1983). I=Micro-level, A=Macro-level; (3) Concerns:- T: Teacher's personal concern
(2) Influence: ref. Jordell (1987), P = personal influences, P: concern for interactions with pupils
S = structural influences. O: concern for interactions with other persons

As for influence, according to Jordell (1987), structural influences, i.e. classroom, school and society, are more important than personal influences at classroom level in the socialization of beginning teachers.

The focus of concern classification was specifically designed in this research with reference to the beginning teachers' focuses of concern in the events/difficulties reported. It was anticipated that beginning teachers would shift their focuses from a more personal to a more pupil-centred and other-centred one during their first year teaching.

At TP2 in Table 7.1 (p.178), the level ratio of structural to personal influences gives slight support to Jordell's views. The concern ratio for the two-month beginning teachers reflects a fairly strong concern with their own problems rather than the pupils'.

At TP3 in Table 7.1, the level ratio reflects that the beginning teachers are gradually shifting focus towards matters related more to other persons other than pupils and themselves. The change of the influence ratio from TP2 to this time point is a possible indication of a very gradual increase in awareness of influences from broader perspectives. The concern ratio of Teacher to Teacher/pupils to teacher/others shows a slight shift in focus to key persons other than themselves and pupils. Concerns about parents are added at this point, but the major concern now is the pupils. Classroom discipline and lesson preparation problems are still high on the list. Marking load and heavy workload are also becoming higher on the list.

At TP4 in Table 7.1, the general pattern is not very different

from that of the sixth month as shown in the ratios. No significant variations between this and the previous time point in the general nature of the problems are reflected in the ratios. It may indicate that situations perceived in the second half of the first year are of minimal variations.

But, more careful examinations of the events/difficulties revealed that there exist qualitative changes from TP2, TP3 to TP4. Observations on the patterns of change in the most important events or difficulties across the three time points are as follows:

a) The top two events at TP4 are concerned with pupils, not with the preparation time;

b) The importance of demanding administrative requirements is clearly lowered from rank 5 at TP2 through rank 8.5 at TP3 to rank 13.5 at TP4: a possible trend showing the familiarization of beginning teachers in their treatment of administrative matters;

c) Classroom discipline is one of the top two throughout all time points which would mean that this is consistently the most prominent difficulty for beginning teachers;

d) Heavy marking load and heavy workload are two aspects of consistent and increasing importance on the list of most important events or difficulties;

e) One strikingly shifting event is handling problem pupils: it moves from rank 8.5 through rank 12.5 to rank 1;

f) Three events at TP2 are repositioned in TP3: obtaining pupils' assignments, covering syllabus as standardized for all and unreasonably high load of non-teaching duties, of which the latter two

are of teachers' personal concern; when teachers are more confident and more adapted, their foci of concern will change to less self-centred problems;

g) The concern for insufficient teaching materials drops sharply from rank 6 at TP2 to rank 15 at TP3 and remains in the same rank at TP4;

h) The first appearance of catering for individual pupils' needs and caring for insufficient school facilities at TP3 clearly indicates a shift of beginners' focus towards more refined adjustments to the workplace situations, a possible sign of positive growth; and

i) In addition, the emergence of issues like relations with parents and with school authorities at TP4 again further reflects the beginning teachers' shift in focus of concern to a wider school context.

The overall picture is of persistent struggle with maintaining classroom discipline, insufficient lesson preparation time and heavy marking load with a growing concern for improving teaching and meeting individual pupils' needs. Problems with parents and school authorities are experienced more strongly as the year unfolds.

2. The Primary subgroup

The experienced difficulties of this subgroup are reported in Table 7.2 (p. 184).

At TP2 in Table 7.2, fewer concerns were reported by the primary teachers than by the whole group (ref. Table 7.1, p.178). The major concerns and rank orders are little different from those of the whole group.

At TP3, the ratios suggest a slight increase in confidence in teaching. One of the most noticeable changes from TP2 to TP3 is the considerable decline in the ranking of 'heavy workload', from rank 2 to rank 10. The other one is 'maintaining relations with colleagues', from rank 6 to rank 11. 'Lesson preparation' and 'maintaining classroom discipline' are consistently ranked at the top of the lists.

At TP4, the primary subgroup seems to have become more stable as the ratios are little different from those at TP3.

The following comments made be made:

a) 'Classroom discipline' was one of the most serious problem for the beginning teachers throughout the year, but gradually their most serious concerns shifted from a more self-centered towards a more pupil-centred orientation: the top ranking item changes from 'lesson preparation' at TP2 to 'classroom discipline' at TP3 and to 'handling problem pupils' at TP4;

b) 'Demanding administrative requirements' is consistently ranked within the top five indicating that this group felt the pressure throughout the year without much sign of its lessening;

c) 'Heavy marking load' increases its impact towards the end of the year;

d) The general drops in 'insufficient lesson preparation time', 'heavy workload', 'maintaining relations with colleagues', 'obtaining

pupils' assignments' and 'teaching non-electives' would indicate a better personal management and a gradual gaining of confidence;

e) The emergence of 'handling problem pupils' (rank 1) and 'arousing pupils' interest and attention' (rank 8) at TP4 are possible indication of beginners' adjustments towards variations in, and sharper focus on, problems; and

f) the steady rise in ranking of 'organizing extracurricular activities' from TP2 to TP4 may be related to the relative drops in concern with in-class management.

Table 7.2

Comparisons of Rankings of the Most Important Events/Difficulties encountered by Primary Subgroup

Events/Difficulties	Ranking at TP2	TP3	TP4	(1)	(2)	(3)
Insufficient lesson preparation time	1	2	5.5	I	S	T
Heavy workload	2	10	7	I	S	T
Maintaining classroom discipline	3.5	1	2	I	P	P
Demanding administrative requirements	3.5	5	4	A	S	O
Dealing with individual differences	5	3	11	I	P	P
Maintaining relations with colleagues	7.5	11	- *	A	P	O
Obtaining pupils' assignments	7.5	6	-	I	P	P
Heavy marking load	7.5	8	3	I	S	T
Relations with parents	7.5	4	9	A	P	O
Teaching non-elective subjects	10	-	-	I	S	T
Organising extracurricular activities	11	8	5	A	S	P
Insufficient school facilities	-	8	10	A	S	O
Handling problem pupils	-	-	1	I	P	P
Arousing pupils' interest and attention	-	-	8	I	P	P
Ratios :- I : A	7:4	6:5	7:4	* : Not included in the top 11 events/difficulties of the time point		
S : P	6:5	6:5	6:5			
T : P : O	4:4:3	3:4:4	3:5:3			

(1) Level: ref. Vonk (1983), I=Micro-level, A=Macro-level; (3) Concerns:- T: Teacher's personal concern
(2) Influence: ref. Jordell (1987), P = personal influences, P: concern for interactions with pupils
S = structural influences. O: concern for interactions with other persons

3. The secondary subgroup

At TP2 in Table 7.3 (p. 186), it shows that the secondary beginning teachers, not exceptionally different from the primary subgroup, concentrated on more personal-centred issues and matters of more immediate concern at the second month of beginning teaching. All ratios suggest relatively strong teacher-centredness. The top ranking of the personal concern item, lesson preparation, is a concrete evidence of this focus of the beginning teachers. Judging from the ratios, the secondary is similar to the primary subgroup at TP2 in their perceived patterns of problems. The main contrast is that arousing pupils' interest and attention ranks high for secondary, but is not even included in the TP2 list for primary.

At TP3, the secondary subgroup seems to have concentrated even more on matters related to their teaching and interactions with pupils rather than reaching out more to other people as shown in the ratios. From the closer examination of the events in the table, the top two ranks of events, heavy marking load and lesson preparation which are of teachers' personal and immediate concern. Maintaining classroom discipline ranks behind these. Organizing Extracurricular Activities increases its ranking from 8.5 from TP2 to 6.5 at TP3, a development similarly found in the primary subgroup (ref. p. 184).

At TP4, as shown in the ratios, there is an extended concentration of the secondary subgroup on matters relating to themselves and the pupils. Handling problem pupils tops the list of difficulties, as it does for the primary subgroup at TP4.

Table 7.3

Comparisons of Rankings of the Most Important Events/Difficulties encountered by Secondary Subgroup

Events/Difficulties	Ranking at TP2	TP3	TP4	(1)	(2)	(3)
Insufficient lesson preparation time	1.5	2	3	I	S	T
Arousing pupils' interest and attention	1.5	4	5.5	I	P	P
Maintaining classroom discipline	3	3	2	I	P	P
Heavy marking load	4	1	7	I	S	T
Dealing with individual pupils' problems	5	6.5	- *	I	P	P
Covering syllabus standardized for all	6	-	-	I	S	T
Ineffective teaching methods	7	9	10	I	S	P
Relations with school administration	8.5	-	-	A	P	O
Organizing extracurricular activities	8.5	6.5	5.5	A	S	O
Maintaining relations with colleagues	10	11	-	A	P	O
Personal health problems	10	-	-	I	S	T
Heavy workload	-	5	4	I	S	T
Dealing with individual differences	-	8	8	I	P	P
Handling problem pupils	-	10	1	I	P	P
Obtaining pupils' assignments	-	-	9	I	P	P
Insufficient teaching materials	-	-	11	I	S	T
Ratios :- I : A	8:3	9:2	10:1	* : Not included in the top 11 events/difficulties of the time point		
S : P	6:5	5:6	6:5			
T : P : O	4:4:3	3:7:1	4:7:0			

(1) Level: ref. Voss (1983), I=Micro-level, A=Macro-level; (3) Concerns:- T: Teacher's personal concern
(2) Influence: ref. Jordell (1987), P = personal influences, P: concern for interactions with pupils
S = structural influences. O: concern for interactions with other persons

Summarizing the secondary subgroup data, several points observed are as follows:

a) There is apparently little variation across time points in strong concern with 'insufficient lesson preparation time', 'maintaining classroom discipline', 'ineffective teaching methods' and 'organizing extracurricular activities'. This suggests a persistent concern with basic survival measures in secondary beginning teachers;

b) The high rankings of 'heavy workload' and 'heavy marking load' across the three time points, and

c) The decline of 'dealing with individual pupils' problems', and with 'arousing pupils' interest and attention' from TP2 to TP4 and the emergence of 'obtaining pupils' assignments' and 'insufficient teaching materials' could be seen as a sign of increasing difficulties in coping with teaching.

4. Comparisons of the most important/difficulties in the Primary and Secondary Subgroups at three time points

From findings in the previous two sections, the following points can be made:

a) The problem of 'insufficient lesson preparation time', though declining in rank from TP2 to TP4, is ranked mostly among the top three. This implies that there is a consistent anxiety in all beginning teachers about lesson preparation;

b) 'Heavy marking load' is persistently an important source of stress and frustration for beginning teachers in both subgroups.

This phenomenon which has been commonly known to be experienced by all teachers in Hong Kong, especially language and mathematics teachers because parents in Hong Kong tend to regard heavier homework load as a sign of 'learning' for their children and of diligence in both students and teachers;

c) 'Heavy workload', a collective term for much unclassified work in school, is of great concern for the primary teachers at TP2 as it ranks second in the list whereas at that time it is not even on the list of the secondary subgroup; but at TP3 and TP4, it becomes less salient for the primary subgroup while in the secondary, it ranks fourth and fifth at the two points respectively, becoming much more important to the secondary beginners;

d) the emergence of 'handling problem pupils' to rank 1 at TP4 for both groups is outstanding as it appears only as rank 10 at TP3 of the secondary and not even in the list of top eleven for the primary; probably, a more refined and accurate adjustment to teacher-pupil relationship after the sixth month and towards the tenth month might have been gradually developed, sensitising teachers to more problems or perhaps the pupils had perceived the beginners' styles and 'weaknesses' in classroom management, and so had more room to make troubles;

e) The pressure of demanding administrative requirements is consistently felt by the primary subgroup throughout the year as it ranks within the top five in all three tables while for the secondary subgroup this problem is not even worth a place in the tables;

f) 'Relations with parents' appears at all time points of the primary subgroup's table indicating that this is a major concern for the primary beginning teachers; but, this is not found in the secondary subgroup's table; and

g) Unlike the primary subgroup, there is a consistent concern for secondary beginners about their effectiveness in teaching throughout the three time points.

Finally, a general comparison of the ratios in Table 7.2 (p.184) and Table 7.3 (p. 186) gives a contrasting picture of the major concerns of the primary and secondary subgroups.

There is a tendency for the primary subgroup to reach out at TP3 to persons other than the pupils and themselves; yet the secondary beginning teachers have shifted to an even more restricted scope of concentration from TP2 through TP3 to TP4 as reflected in the level and concern ratios. There is evidence from the data analysis to support and interpret findings of the previous chapter. For the primary subgroup, there seems to be an increase in perceived competence in teaching from TP2 to TP3 while for the secondary subgroup, there is no obvious change after the drop at TP2.

B. Personal Impressions of Teaching

The original question of (C)(1) in BTVQ is read as '(C)(1) Please give your general comments on your overall impression of the teaching experience'.

In the following analysis, respondents were sub-divided according to their subgroup levels of either primary or secondary and to their dominant states obtained in BTDQ at the time points, either in the Survival or Growth state groups. The comments listed below were basically the essence of the responses collected from their written responses mainly in English with a few in Chinese which were translated. Each comment was identified as conveying the negative, positive or mixed experience (ref. Table 7.4, p. 197).

1. The Overall impression of teaching: primary subgroup

(a) Two-month teaching experience (TP2): (N = 7)

(1) Survival state group (N=4)

- full of blanks and sometimes pain,
- sorry for the pupils because of the lack of real learning,
- has been trying to be like a professional,
- Satisfactory,
- a little bit joy sometimes, and
- quite alright because of good students and colleagues.

(2) Growth state group (N=3)

- challenging, and

- experience is more important.

(b) Six-month teaching experience (TP3): (N = 10)

(1) Survival state group (N=4)

- challenging,
- have some confidence in teaching but threatening attitude of some pupils was discouraging,
- colleagues' support important to upkeep morale,
- not bad, and
- hard, difficult, rarely satisfying.

(2) Growth state group (N=5)

- satisfactory,
- on average quite good,
- tiring but still felt satisfying,
- pleasant, enjoyable but felt helpless for pupils from broken families, and
- harsh because of heavy load but still with satisfactions.

(3) Unclassified (Responding to Ques. Two only): (N=1)

- challenging, everchanging, colleagues' support important to upkeep morale.

(c) Ten-month teaching experience (TP4): (N = 27)

(1) Survival state group (N=13)

- not challenging,
- depressing,
- many failure experience, inadequate background knowledge, career meaningful because of improvement of pupils
- exciting in the beginning; but felt tedious later
- work is much more difficult than in the beginning.
- patience and experience are important for development.

(2) Growth state group (N=12)

- useful, meaningful, a good opportunity to put all things learnt into practice,
- enjoyable and happy experience,
- fruitful,
- quite well then,
- coping with pupils' needs and estimating ones effort and limits,
- in spite of some frustrations, teaching is rewarding,
- bitterness more than sweetness, heavy workload but still like teaching,
- hard work, heavy load, lack of resources and help,
- need hardworking, intrinsic satisfaction through correcting, and
- doubtful of ones own suitability to teaching.

(3) Unclassified (Responding to Ques. Two only): (N=2)

- very challenging (N=2).

2. The overall impression of teaching: secondary subgroup

(a) Two-month teaching experience (TP2) (N = 16)

(1) Survival state group (N=8)

- difficult and demanding both mentally and physically,
- hard to prepare well,
- disappointed with the job, doubtful of 'goodness' in human nature as observed from pupils' mis-behaviours,
- no simple task,
- a very hard work, teaching experience entirely from the teaching practice experience,
- quite nice but tiring, and
- felt happy for good classes, but depressed and upset when facing poor classes.

(2) Growth state group (N=6)

- satisfactory (N=3),
- quite challenging, attractive, but heavy workload,
- enjoyable though with frustrations at times, and
- techniques have to be varied for mixed ability groups.

(3) Unclassified (Responding to Ques. Two only): (N=2)

- exciting, tiring, and
- 'nightmare!'.

(b) Six-month teaching experience (TP3) (N = 27)

(1) Survival state group (N=12)

- hard, non-stopping work, tired and without rests, but still some satisfaction obtained,
- too much to teach, tiring to rush through lessons,
- workload really surprised her,
- rather unsatisfying,
- boring and upset,
- no prospect in future in teaching,
- hard,
- with lots of constraints, e.g., lack of time, poor and varied pupils' standard in learning,
- quite pleasant,
- as expected and generally acceptable, and
- challenging, sometimes obtaining job satisfaction but also frustration sometimes.

(2) Growth state group (N=15)

- enjoyable (N=3),
- challenging (N=3),
- good, learning a lot from pupils of different family background,

- glad to have worked in a school of hardworking colleagues and pupils,

- a lot of satisfaction through heavy non-teaching workload,

- rewarding in some classes though discouraging in some others,

- concentrated on individual pupils' needs more than on teaching, and

- rewarding in spite of some unexpected difficulties.

(c) Ten-month teaching experience (TP4): (N = 38)

(1) Survival state group: (N=15)

- challenging (N=3),

- hard (N=2),

- difficult to get sense of achievement because of heavy workload,

- a difficult job in handling pupils' problems,

- sometimes sweet but most of the time terrible and frustrating,

- teacher must be strong, firm hard working and concern of pupils,

- lighter work in good schools; difficult to survive for fresh graduates in bad schools,

- like performing arts, need to be well-prepared, quick, sensible to respond, with a wide scope of knowledge, funny character and never feel despair and give up,

- need to adapt, hard to feel satisfaction in present situations,

- must be sever and stern, not to be taken advantage by pupils,

- teaching junior forms is a challenge, reward is a long thing that may come after some years,

- good chance to gain experience, and

-exciting.

(2) Growth state group: (N=23)

- it's good, enjoyable interactions with pupils (N=3),
- satisfactory (N=2),
- quite encouraging, sense of satisfaction encourages one to continue teaching,
- very meaningful, love to be a teacher,
- very good, feel comfortable,
- tired but challenging,
- quite rewarding but much effort needed,
- busy but very enjoyable,
- a valuable job but also hard,
- still enthusiastic in spite of hardship, the more events, the more challenges, the more experience,
- heavy load, quite demanding in different aspects, must be healthy and energetic,
- learning by doing,
- experience good for improvement,
- experience more important than theory, evaluation needed,
- do not expect too much, and
- boring, so much work.

3. The Overall impression of teaching: comparisons of primary and secondary subgroups

Table 7.4 (ref. p.197) is a summary table to show the percentage distribution of four types of responses. At the second month of teaching (TP2), Growth groups generally expressed positive comments while the secondary Survival group gives a set of

predominantly negative comments; the primary Survival group, an even distribution in all categories.

At the sixth month (TP3), the primary Survival group expressed mainly positive comments while those from the secondary counterpart, were predominantly negative. The primary Growth group were mainly mixed in comment type, and the secondary predominantly positive.

At the tenth month (TP4), all Growth groups are mainly positive. The Survival group are more negative though the secondary gives more suggestions than comments.

Generally speaking, comments from Survival groups are mainly negative and those from the Growth groups are mainly positive across all time points. This correlation, albeit not strong, between states as determined from BTDQ and experience as reported in the BTVQ is a useful partial validation of the BTDQ and provides fuller interpretive material.

Table 7.4

Summary table to show percentage distribution of different types of responses of General Impression on Teaching: Primary & Secondary subgroups

	2 - month				6 - month				10 - month			
%	Neg.	Pos.	Mix.	Sug.	Neg.	Pos.	Mix.	Sug.	Neg.	Pos.	Mix.	Sug.
Primary												
Survival	33.3	33.3	33.3	-	25	50	25	-	66.7	16.7	16.7	-
Growth	-	100	-	-	-	40	60	-	20	40	20	20
Unclassified#	-	-	-	-	-	100	-	-	-	100	-	-
Secondary												
Survival	83.3	-	16.7	-	72.7	18.2	9.1	-	23.1	23.1	8.3	38.5
Growth	-	50	40	10	8.3	75	13.2	-	5.6	55.5	33.3	5.6

Note: Each percentage is calculated according to number of items in each cell to the total listed in the group at the time point; e.g. % of Primary, survival group, negative comments = 2 / 6 x 100% = 33.3%.

Legend:

Survival : group of respondents with dominant states of perplexity or control anxiety;

Growth : group of respondents with dominant states of experimentation, reflection or integration.

Neg. : negative comments; Pos. : positive comments; Mix. : Mixed comments (negative + positive)
Sug. : suggestions

: group of respondents responding to Questionnaire Two only and not able to be identified of their dominant states which is based on Questionnaire One scores.

Note : The percentages can only be indicative given the small sample sizes.

C. A Retrospective View of The Most Important Events or Difficulties encountered

Introduction

The cross-sectional data did not test the 'reality shock' aspect of the research model in terms of the intensity of experience of difficulty. In order to gather data for comparison across the time points for this purpose and to gather the same set of data from those who might have not responded previously, two additional open-ended questions were added at the end of Questionnaire One (ref. Appendix 10, p. 295) for TP4 (June, 1991). The original questions are as follows,

'- At what time during the past ten months, did you feel most helpless or at a loss ? (Please indicate by circling the appropriate month(s))

Sept Oct Nov Dec Jan Feb Mar Apr May Jun Others:_____

- What was/were the most difficult problems/situations encountered at that time ? (Please name and explain)'

1. The most difficult time

In Table 7.5 (ref. p.199), the frequency distribution of months in which the whole group of respondents encountered the most difficult time reveals that over 60% of the troubles occurred in the first three months, September, October and November; and nearly 50% happened in the first two. In the remaining months of the year, the range is from about 4% to 6%.

Table 7.5

Frequency Distribution of Months in which Beginning Teachers Reported to have encountered the most difficult time

Month	S	O	N	D	J	F	M	A	M	J	Nil	Total
Primary	35	22	7	3	4	0	3	4	6	9	4	97*
(%)	36	23	7	3	4	0	3	4	6	9	4	(100%)
Secondary	43	37	26	9	7	11	9	11	10	7	9	179*
(%)	24	21	14	5	4	6	5	6	6	4	5	(100%)
Whole	78	59	33	12	11	11	12	15	16	16	13	276*
(%)	28	21	12	4	4	4	4	6	6	6	5	(100%)

*: More than one month could be reported by one respondent.

For the primary group, 66% of the problems were reported in the first three months but they were concentrated particularly in the first two months as 59% were recorded for September and October. Thereafter between 3% and 9% were reported for each month.

For the secondary subgroup, about 60% of the problems were reported to occur in the first three months of the academic year with 45% of them in September and October. In other months of the year the proportion of problems reported ranges quite evenly between 4 to 6%.

It is clear that beginning teachers felt they had encountered their most difficult time in the first three months of the first year.

In the following, the most important events or difficulties beginning teachers remembered encountering are listed for the whole group only as this study is used as a comparison with the cross-sectional counterpart for the whole group (see p. 178).

2. The most important events/difficulties encountered

Using the same ratios for analysis as in the cross-sectional study, Table 7.6 (p. 201) summarizes the various types of events/difficulties at different times in the year. Events/difficulties which happened in September to November are grouped in column (I) in Table 7.6; December to March in column (II) and April to June in column (III) which are comparable to tables of events/difficulties at the second, sixth and tenth month of the cross-sectional study in Section A.

Table 7.6

Comparisons of Rankings of the Most Important Events/Difficulties encountered by Beginning Teachers (Retrospective Study)

Events/Difficulties	Ranking at (I)	(II)	(III)	(1)	(2)	(3)
Adaptation	1	- *	-	I	S	T
Maintaining classroom discipline	2	4	3	I	P	P
Heavy workload	3	2.5	1	I	S	T
Insufficient lesson preparation time	4.5	-	6.5	I	S	T
Handling problem pupils	4.5	1	2	I	P	P
Demanding administrative requirements	6	11.5	-	A	P	O
Maintaining relations with colleagues	7.5	11.5	-	A	P	O
Heavy marking load	7.5	6	6.5	I	S	T
Dealing with individual differences	9	11.5	-	I	P	P
Ineffective teaching methods	12	6	-	I	S	P
Organizing extracurricular activities	12	2.5	9.5	A	S	P
Arousing pupils' interest and attention	12	11.5	4	I	P	P
Teaching non-elective subjects	12	-	-	I	S	T
Lack of confidence	12	-	-	I	S	T
Mismatching of teaching styles	-	6	-	I	S	T
Dealing with teacher/pupil relationship	-	11.5	-	I	P	P
Handling slow learners	-	11.5	-	I	P	P
Health problems	-	11.5	-	I	S	T
Poor classroom learning environment	-	-	6.5	I	S	T
Burnout feeling	-	-	6.5	I	S	T
Dealing with parents	-	-	9.5	A	P	O
Ratios :- I : A (in %)	79:21	79:21	79:21	* : Not included in the 14 events/difficulties of the time point		
S : P	53:47	43:57	60:40			
T : P : O	43:43:14,	29.57:14,	50:40:10			

(1) Level: ref. Vonk (1983). I=Micro-level. A=Macro-level; (3) Concerns:- T: Teacher's personal concern
(2) Influence: ref. Jordell (1987). P = personal influences, P: concern for interactions with pupils
S = structural influences. O: concern for interactions with other persons
(I): Sept. 90 - Nov. 90; (II): Dec. 90 - Mar. 91; (III): Apr. 91 - Jun. 91.

In column (I) of Table 7.6 (ref. p. 201), based on retrospective reports, beginning teachers (23 of 110) put adaptation as the most important of the 14 events in the first three months. Referring to the level ratio, the emphasis of activities was at the classroom level or with matters related to teachers' or pupils', very few with other persons. The concern ratio is even more distinctly indicating a teacher-focused orientation over pupils and others.

In column (II), though the level ratio is the same as in the previous one, the concern ratio shifts towards a more pupil-focused orientation in their perceived problems at about the sixth month of teaching. It can be deduced that beginning teachers would have become more relaxed to deal with problems of broader perspectives.

In column (III), the level ratio and the concern ratio are almost the same as in column (I). This is a reverted trend of change back to a more teacher-focused orientation caused possibly by a negative change in their confidence level in teaching. Judging from the list, burnout feeling, appearing the first time in the three columns, is a point to ponder upon as this is expressed only at the end of the first year.

Comparing the rankings of the three columns in Table 7.6 (p. 201), 'heavy workload' increases its rank from the third to the first and 'classroom discipline' is always in the top ranks. These are persistent problems for these teachers.

In the second half of the year, 'handling problem pupils' ranks within the top two problems, an increasingly tough and important

problem that beginning teachers have to face towards the end of the first year.

This retrospective view adds to the cross-sectional in that some of the teachers see the beginning phase as 'adaptive', as a learning phase, and that it was the time when difficulties were most frequent. The differences between primary and secondary teachers are in line with the findings on p. 180-181.

The apparent contradiction between persistence of reference to problems and the frequency data of problems may be resolved within the research model. Teachers may emerge from the 'reality shock' in different ways, and it has already been shown that survival states persist concurrently with growth. However, individual teachers may be in a psychological state corresponding to 'reality shock' for much longer, or later, than others.

D. A summary of findings on the most important events/ difficulties encountered by whole group from the cross-sectional and the retrospective reports

From the findings from both sets of data, it can be concluded that beginning teachers were rather self-centred in the first two to three months, concerned with their own control, lesson preparation, workload and demands from administration. After teaching for about six months, they showed more concern for individual pupils' problems and relations with colleagues, parents and the administration. This change extended to the tenth month, though there was a possible slight reversion towards a more teacher-centred focus by the end of the year.

Among the important events reported, lesson preparation, classroom discipline, heavy workload and marking load ranked high across the time points for both groups; even after a year, beginning teachers still felt strongly about these acute problems. Handling problem pupils ranked as a top item for both groups at TP4, but was not of such prominence for the cross-sectional group at TP2 (rank 8) and TP3 (rank 12). The higher ranking for it in the retrospective group might be due to the immediate influence of the impression at TP4. At different times of the year, problems reported by the cross-sectional group changed from a more personal and classroom oriented perspective to a more classroom and school oriented one, extending also to relations with the parents. But the retrospective reports included more problems relating to the teachers themselves e.g., burnout feeling and poor classroom learning atmosphere. The global term 'adaptation' has been given

by many for the early period without specifying exactly the problems involved. It is essential to gather information longitudinally of what were the most important matters just when they happened, otherwise time blurs the memories of events.

It is also possible to conclude that beginning teachers have encountered most of their problems in the first three months and after that they have regained some confidence to be less self-centred and gradually to broaden their scope of attention and concern towards their pupils and other significant persons related to their pupils and school work.

It is particularly important to point out that handling problem pupils and maintaining classroom discipline are not only the persistently important problems at all times but are increasingly top ranked ones by the end of the year; if beginning teachers continue to be left on their own to solve them, 'burnout feeling' will not only be expressed by some but will be extended to more and more young and enthusiastic beginners who would soon be disillusioned and 'die before reaching maturity' in the teaching profession, not only mentally but for some, even physically.

Part II: Analysis of Interviews with Respondents and Non-respondents to Questionnaires

Introduction

To test for sampling bias in the respondents, fifteen from the respondents and thirteen from the non-respondents to questionnaires sent at all time points chosen as a stratified sample and successfully interviewed by telephone. The interviews were structured with reference to some questions in Questionnaire II: a) timing and the types of the most important events/difficulties in the year, b) the general treatment of these events/difficulties, c) general impressions of the teaching experience.

Summaries of findings for both groups are given in the order of the questions asked in Questionnaire II. To facilitate comparisons in various items between the two groups of interviewees, responses of the respondent group have been listed as one group without further categorizing them according to survival/growth state subgroups as was done earlier.

A. The most important events / difficulties encountered

The respondent group

Most respondents indicated that they had encountered the most difficult times in the first two months of the first year with a few difficulties persisting throughout the whole year (see Table 7.7, p. 209). The most important problems are the same as those reported in the retrospective study, with some variation in the category 'not many difficulties'. A further study on the non-respondents would be able to verify whether the difference was due to sampling teachers who had not responded earlier. Top on the list is adaptation which is exactly the same as reported in the retrospective study. This is interpreted as a reflection of beginning teachers' global feeling of their experience of the first two months of teaching. The rest of the problems are also the persistent problems reported by all respondents in the cross-sectional and the retrospective studies. Heavy workload is indicated by two interviewees as an important difficulty throughout the year without finding any ways to lessen both the physical and mental pressure it has been exerting on them.

2. The non-respondent group

In Table 7.8 (ref. p.209), all events/difficulties are identical with those of the respondent group except the last one, marking load. The only differences are the rank orders of the

items. This indicates that these problems are possibly the most important ones experienced by most first year beginning teachers. That the non-respondents may have been those who have encountered fewer problems is not immediately evident as the top three problems are similar to all problems reported in various groups at different times; even if the category of 'not many difficulties' is on the list, it is not evidently different from the pattern of distribution of the respondent group.

'Classroom discipline' is again reported as a problem of considerable concern by this group of beginning teachers, persistently so throughout the year and especially in the first term.

Another problem which is in line with findings of the cross-sectional group is 'heavy marking load' throughout the whole year, but especially in October, November and December.

In conclusion, the two groups of interviewees have encountered nearly identical sets of problems in the first year: there seems to be no evidence to show that the non-responding beginning teachers differ distinctly from those who have responded as far as the most important events/difficulties encountered are concerned.

Table 7.7

Summary table of the most important events/difficulties encountered by beginning teachers as reported in the interviews
The Respondents' Group
(N = 15)

Rank	Event/Difficulties	Time	Concern
1.5	Adaptation	Sept, Oct	T
1.5	Heavy workload	Sept, Oct whole year	T
4	Unexpectedly high % of non-teaching duties	Sept, Oct	T
4	Maintaining classroom discipline	Sept, Oct Feb, Mar	P
4	Not many difficulties	-	-

Table 7.8

Summary table of the most important events/difficulties encountered by beginning teachers as reported in the interviews
The Non-respondent Group
(N = 13)

Rank	Event/Difficulties	Time	Concern
1	Maintaining classroom discipline	First term, whole year	P
2	Unexpectedly high % of non-teaching duties	Sept, Oct	T
3.5	Adaptation	Sept, Oct, Nov, Dec	T
3.5	Not many difficulties	-	-
5.5	Heavy workload	Sept, Oct	T
5.5	Heavy marking load	Oct, Nov, Dec, whole year	T

Legend:

Concern:- T: teacher's personal concern
P: concern for interactions with pupils
O: concern for interactions with other persons

B. Personal impressions on teaching: an interview study

The following is a summary of the views of interviewees on teaching, in a retrospective perspective comparable to that reported on p. 190-195. For the sake of giving a more integrated picture of changes in the year, views are not separated by time points but using each interviewee as a unit for summary.

1. The respondent group: (N = 13; 2 out of 15 without comment)

(a) 'a painful experience: there exists such a gap between the reality and the ideal...';

(b) 'I preferred corporal punishment for some kids (primary) as they need it; but as it is abolished recently, I feel helpless at times...' and

'experience counts, NOT theory';

(c) 'before I was graduated from the college, I had some ideals and expectations, but now, only disillusionment and contradictions';

(d) 'it is the pressure from the government and the parents who force pupils to schools; I find many of them without any interest and positive motivation to learn' and

'the curricula should have to be changed to suit their needs';

(e) '... in the beginning I was full of enthusiasm to teach these less fortunate pupils of special needs (primary level), throughout the year I was so disturbed by their "seemingly" overdemanding attitudes, I felt hurt and helpless and became emotionally unstable myself; I have planned to quit';

(f) '...actually I did not have much expectations from the college course since not many of the trainers did what they preached; but even so I have been further disillusioned when facing the real teaching situations in school';

(g) 'disappointment was developed early in the term and it worsened towards the second term when a few pupils

even challenged me in lessons; I felt being threatened';

(h) 'teaching is just a job; I usually imitate what my teachers in the secondary *have* done to me; not much that I can get from what I learned from the college';

(i) 'I have solved problems on my own; sometimes from colleagues' help';

(j) 'teaching is good and rewarding, better than I have expected (teaching in a prestigious religious primary school with first class pupils and parents)';

(k) 'be firm to pupils in order to sustain classroom discipline: that is what I have learnt';

(l) 'I have anticipated that teaching is no an easy job: much is learnt through experience'; and

(m) 'I survive because I can always get some stimulations from good performance of a few pupils who have been very hardworking'.

2. The non-respondent group: (N = 12; 1 out of 13 without comment)

(a) 'I felt a strong sense of defeat...'

(b) '...oh, just struggling for survival, that's all';

(c) 'teaching is difficult throughout the year...';

(d) 'teaching is difficult in some classes',

(e) 'teaching is just a job, not much is expected';

(g) 'the longer you teach, the less sensitive to pupils' needs you would be...';

(h) 'teaching is happy and enjoyable';

(i) 'my teaching is generally satisfactory';

(j) '...learning to teach by myself...'

(k) 'gaining pupils' respect is important';

(l) '... must be patient and diligent...'; and

(m) 'I have learnt from my colleagues and from my experience'.

The respondents were more willing to give greater detail to the questions asked but the messages delivered by the group are very similar to those of the non-respondents.

There are four views commonly expressed by some interviewees of both groups: a) they have felt the discrepancies between theory learnt in the college and the reality they faced in teaching; b) some of them have been holding the opinion that teaching is but a type of job and what they need is to follow what their fellow teachers or their own teachers have done or have been doing in order to survive; c) some have said that their survival and growth is basically relying on their own effort to learn through 'experience' and occasionally, help from colleagues; and d) some have experienced initial success through their teaching because of the good quality of pupils or school.

A few of the respondent interviewees clearly expressed their disappointment or disillusionment when first entering real teaching situations which were even more traumatic than the first teaching practice they encountered.

In conclusion, it is not evident, from the concerns reported on teaching experience, that the non-respondents were different from the respondents in the interview study.

Concluding statements from the BTVQ and Interviews

Summarising the analysis of beginning teachers' views on the Questionnaire Two, the supplementary questions for tenth-month respondents and the interviews to some respondents and non-respondents in previous studies, the following are the general statements for these qualitative findings:

1. The beginning teachers have encountered most of their problems in the first three months of teaching, especially in the months of September and October. This is in line with the findings of the cross-sectional study and the longitudinal study in which a general lowering in PCT was located at TP2, the second month of first year teaching giving support to the location of the 'reality shock' postulated in the model.

2. The types of the most important events/difficulties encountered generally changed from more teacher-centred ones in the beginning of the year to more pupil-centred and other-centred towards the end of the year. This is in line with the theoretical basis of the model on the characteristics of growth dominating towards the latter half of the first year of teaching.

3. The most persistent problems throughout the year and top on the lists are 'maintaining classroom discipline', 'dealing with problem pupils', 'heavy workload' and 'heavy marking load' in which the last two are of increasing importance from the beginning to the end of the year. These problems might have been part

of the causes for the persistent level of the 'Survival' states throughout the first year in the BTDQ findings.

4. The primary beginning teachers have changed more obviously from a teacher-centred orientation to a more other-centered one than the secondary group which has apparently changed back to a more teacher-centred perspective by the end of the year.

5. Teachers in the Growth states are more positive in their comments and impressions of their teaching experiences while those in the Survival states are more negative and even resentful in their opinions on teaching in general.

CHAPTER EIGHT

THE MODEL ON THE PROCESS OF LEARNING TO TEACH: EVALUATION, CONCLUSIONS AND RECOMMENDATIONS

To facilitate discussions on the answers for the research questions, findings and their contributions to the evaluation of the research model on the process of learning to teach are elaborated in the following parts.

Part I: Answering the Research Questions

The two research questions presented in Chapter Five are as follows:

'1) What is the nature of the 'reality shock' phenomenon if it can be shown to occur?

and

2) Is there a general and predictable pattern of change in the process of learning to teach over the year?'

Discussions on the 'reality shock' and the process of learning to teach are presented in the sections to follow.

A. 'Reality Shock'

By definition in this research, the 'reality shock' is the significant general decline in perceived competence in teaching during the first year; and, is postulated to occur within the first two or three months (ref. p. 98).

Through the BTDQ the cross-sectional study, the 'reality shock' was located at TP2, the end of the familiarisation phase

of the model or at the end of the second month of first year teaching as there existed a significant lowering in the general PCT of the beginning teachers. Further support came from the BTDQ longitudinal study in which the same significant result was found. Through the BTVQ retrospective and interview studies, it was concluded that most teachers had encountered their most difficult time within the first three months especially in the first two months.

An analysis of the nature of the 'reality shock' through the BTDQ cross-sectional study showed a significant lowering from TP1 to TP2 in 'Experimentation', 'Reflection' and 'Integration' and in the mean Growth state but without any significant changes in the Survival states of 'Perplexity' and 'Control Anxiety'. It can be concluded that the changes in Growth states mainly accounted for the general lowering in PCT in this familiarization phase. From the BTVQ cross-sectional study, it was reported that beginning teachers had encountered a considerable impact of events or difficulties of unexpected quantity or intensity within the first two months of their first year full-time teaching with top ranking problems like 'maintaining classroom discipline', 'insufficient lesson preparation time', 'heavy marking load', 'heavy workload', 'demanding administrative requirements' and 'arousing pupils' interest and attention' of which all except the last were basically of teachers' own concern for a more secure state in the workplace. Since a great variety of problems and tasks were to be finished within 'unexpectedly' short deadlines, it would be 'shocking' for the first year beginning teachers who were still students just a few months before September, the first month of

the school term. From the BTVQ retrospective and interview studies, 'adaptation' was the most frequent term reported to summarise their experience in the first two months of teaching. It was a different perspective when recollecting on what had happened in the beginning of the year because different meanings could be attributed to the same events/diffculties reported. It is necessary, on one hand, to collect views at different time points since memories might be blurred by things coming up in the latter part of the year; but, on the other, the change in perspective by the end would shed new lights in the understanding of their changes. In the present research situation, grossly summarising the complex set of events into one term may suggest for a certain reflected view that these are regarded as a part of an experience and are no longer the focus of concern in teaching.

B. Pattern of change in the process of learning to teach

To compare the findings with hypotheses postulated in the model (see p.88-92), discussions are focussed on findings at TP1, and those at the end of three phases: familiarisation (TP2), adjustment (TP3) and stabilisation (TP4).

At TP1, as revealed in the BTDQ cross-sectional findings, the general PCT level reflected by the grand total score is significantly higher than that at TP2 in the whole group. This is a positive support for the theoretical situations postulated in the model.

In the familiarisation phase (between TP1 and TP2) as summarised at TP2, a significant lowering in general PCT is recorded, supporting the predicted occurrence of the 'reality shock' phenomenon in the model.

In the adjustment phase (between TP2 and TP3), there is no significant difference in comparison with that of the last time point in the general PCT of the whole group. This is in line with the second possible situation as postulated in the model within this phase.

In the last phase of stabilisation, there is no significant difference between the general PCT at this time point and that of the previous one. The finding is regarded as supporting evidence for one of the three possible alternatives of development in PCT postulated in this phase.

In conclusion, the pattern of change in general PCT of the whole group follows the postulated pattern of '1 - 2a - 3a' in Figure 4.4 (p. 85).

The general pattern deduced from the findings reveals a picture which calls for serious discussions: after encountering the real teaching situations within the first two months, beginning teachers were considerably disillusioned and after that no obvious improvement in their perception of competence in teaching was detected till the end of the first year. It is not encouraging to see beginners in such a state of mind towards their profession at such an early stage in their career. More refined analysis in the next part on the interplay of individual states would

be expected to disclose more clearly the factors underlying the general pattern found.

It is postulated in the model (see p.87) that individual beginning teachers' focus of concern for growth or survival at certain points could be reflected by the dominance of a state in either of these state groups. The analysis of the BTDQ cross-sectional data revealed that the dominant states for individual beginning teachers at all time points are positively correlated with their grand totals at the corresponding time points. This indicates that this index can partially reflect the general level of PCT and is a useful index for identification purpose for individual beginning teachers. Caution is required when using it as a diagnostic means since only one state score is utilized in this process without using information of all other states. Further support for the usefulness of this index is gathered from the BTVQ cross-sectional study findings on personal impressions of teaching. By categorising the respondents in terms of Survival and Growth state groups according to their dominant states attained in the BTDQ responses, it is concluded that the Growth groups of primary and secondary are generally positive in most comments across the time points while those of the survival groups are generally negative. It is thus an index recommendable for quick reference on the identification of individuals who might need assistance.

C. Supporting evidences for the findings

The confidence placed in the findings of this research are

established in several aspects: the instrument development, the sampling processes and the multi-persective approach in the design of the field procedures and statistical analyses.

In the process of instrument development, the 50-item response-typed BTDQ was developed with reference to theories concerning beginning teachers' socialisation process and to the models on the encountering of life events and the process of learning-to-learn (ref. p. 101-102). Through the content validation and the item-analytic process of the data collected from a pilot study on beginning teachers similar in background to the potential sample of the study, the BTDQ was prepared for use. Confirmative factor analyses after the main study supported the view the individual states were validly representing single factors across the time points and the two state groups of Survival and Growth are also supported as the set of higher order dimensions as originally designed in the research use (see p. 105-106).

The BTVQ, an open-ended questionnaire, was also pretested and content validated before use.

As indicated in Fig. 6.1 (p. 108), to maximize the number of respondents that would respond at all time points, it was designed to take all respondents of the previous time point for each study session. In order to ensure a sufficiently large and representative population sample at individual time points, non-respondents of the previous time point were sampled and input for each session. But, with an intention to encourage more non-respondents to respond, only 50% of them were taken each time reserving the next 50% for input in the next session. Through

these designs, a range of 115 to 202 respondents were recorded for the four time points and 15 had responded at all time points. A reasonable percentage of respondents was thus maintained throughout the study.

A multi-perspective approach was used in setting up a network of cross-validation. The main study of the BTDQ cross-sectional group involving respondents at four time points was compared with a parallel study of the group of 15 'originals' (BTDQ longitudinal group) who had responded at all time points. This has cross-validated the timing of the occurrence of 'reality shock' and the pattern of change in general PCT and in the change of individual states across the time points.

Complementary to the BTDQ study, the BTVQ cross-sectional study partially cross-validated the timing of 'reality shock' and the pattern of change in general PCT, enriching them with more information on the nature of the two aspects.

The retrospective study based on the two additional questions to BTDQ at TP4 cross-validated the timing and nature of the 'reality shock' and enriched it with the information on its intensity in terms of percentage of problems reported.

The interview studies which were based on BTVQ involved a group of respondents and a parallel group of interviewees who were absolute non-respondents to the research but within the sample of beginning teachers. There was no distinct difference between the two groups in their responses to the interviews. Thus the checking for possible sampling bias in the study was partially cross-validated by the interview studies.

Part II: Evaluating the research model: Model on the process of learning to teach

Through the findings from various sources, the general PCT is shown to have positively supported the existence of the 'reality shock' phenomenon and the pattern of change in the process of learning to teach during the first year in the whole group. They fit well with the corresponding postulated aspects in the research model. But to further evaluate the whole model, more elaboration on findings concerning the interplay of the individual states and the state groups is required.

A. 'Reality shock': an evaluation and redefinition

By examining the BTDQ cross-sectional findings, between TP1 and TP2, three states among the five, Experimentation, Reflection and Integration were found to be declining significantly while the other two, Perplexity and Control Anxiety were not significantly changing. Consequently, there was a significant lowering in mean Growth state but none in the mean Survival. The above set of results were supported by those from the BTDQ longitudinal study except for Integration.

The postulated lowering in most states is supported by the three states of the Growth group in the findings but not by the two Survival states. This difference creates an interesting issue to be more detailedly discussed.

A general lowering in PCT, if defined by the interplay of the two higher order dimensions of mean Growth and Survival states,

could be one of the three possibilities:

(a) a decrease in Growth with an increase in Survival (raw score; if converted, a decrease also);

(b) insignificant change in Growth with an increase in Survival, and

(c) a decrease in Growth with insignificant change in Survival.

The situation hypothesised in the research model was case (a). But, from the findings , the case reflected by the beginning teachers studied was (c) which was different from the postulated case. Judging from this situation at TP2, it was likely that the levels of Perplexity and Control Anxiety were persisted at a level similar to that obtaining before they started teaching and the fall of Growth states would actually be more accountable for the general lowering in PCT and thus the creation of 'reality shock'.

At this point it is possible to suggest a modification the definition of the 'reality shock' phenomenon in terms of the interplay of the mean Growth and Survival states portrayed in the three cases mentioned above.

It is reasonable to argue that if 'reality shock' is regarded as significant in the process of learning to teach, it would, as anticipated in an aleatory-change model, occur time after time. But the nature of 'shock' would be different at differnt times in the sense that the pattern of interplay of Growth of Survival would be different. So, the redefined 'reality shock' can be a recurring phenomenon in the

process of learning to teach even beyond the first year teaching and not restricted to a group of novice teachers. Owing to the multi-faceted and the possibly recurrent nature of this phenomenon, it is suggested the phenomenon be renamed '<u>transitional crisis</u>'.

<u>B. Pattern of change in PCT: an evaluation</u>

With reference to the pattern of change in the general PCT for the whole group, the insignificant changes in general PCT in the adjustment phase (from TP2 to TP3) and in the stabilisation phase (from TP3 to TP4) can be more specifically expressed as the insignificant changes in mean Growth state and the mean Survival state. For individual states, there was only a significant increase in Integration between TP2 and TP3 found in the BTDQ longitudinal study. No conclusive evidence is deduced that the mean Growth is more influential than the Survival.

But, the findings of the BTDQ cross-sectional study of the primary subgroup suggest that there was a significant increase in mean Growth state and each of the two Growth states of Reflection and Integration, but none for the Survival ones. It is thus highly likely that the rise and fall of the mean Growth state would more accurately indicate the general rise and fall of the general PCT, i.e. the general pattern of change in the process of learning to teach in the model as far as the present sample is concerned.

If the interplay of mean Growth and mean Survival are accepted as the basic underlying dimensions for the elaboration of the pattern of change in general PCT in the model, the general pat-

tern found in this research can be expressed in three possible conditions (see Fig. 8.1, p. 226).

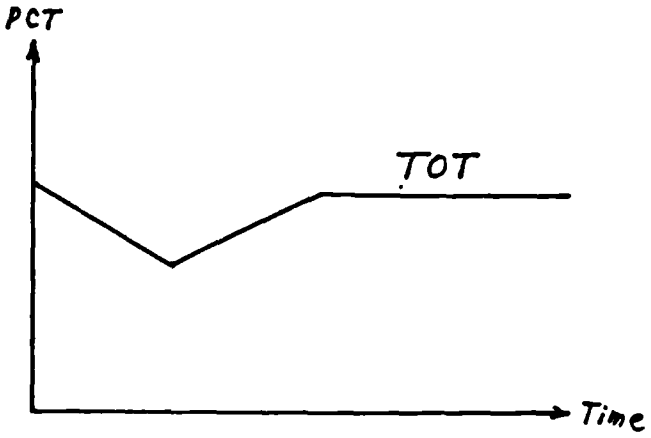
In condition I, which is exactly the picture found in the present study, the rise and fall of Growth is the most influential dimension affecting the rise and fall of the general PCT and the Survival is basically without much variation throughout the period of study. The search for the causes of the persistence of Survival in this case would then be a major focus of research and action if growth in PCT is to be promoted. Short-term treatment of the 'reality shock' may not be able to alleviate the core problems which are grossly illustrated in the Survival state levels.

In condition II, the rise and fall of the two dimensions are generally of the same orientation throughout the whole period. Thus the change in general PCT level through time is equally attributable to the interplay of the two dimensions. In this case, the 'trough', which is termed as 'reality shock' is a relatively short-termed phenomenon in comparison with that in condition I. Treatment on induction or any assistance for the novice teachers would not be the same as those designed for the novices in condition I mentioned above.

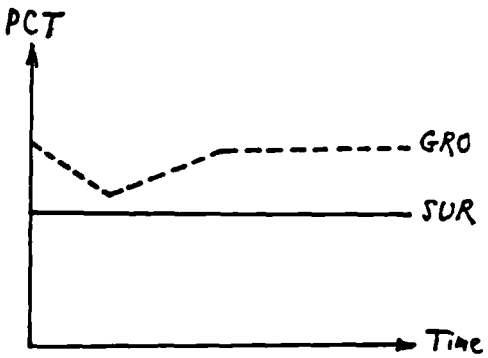
Fig. 8.1

An Example of General PCT Pattern and its possible conditions of interplay of Dimensions of Growth & Survival

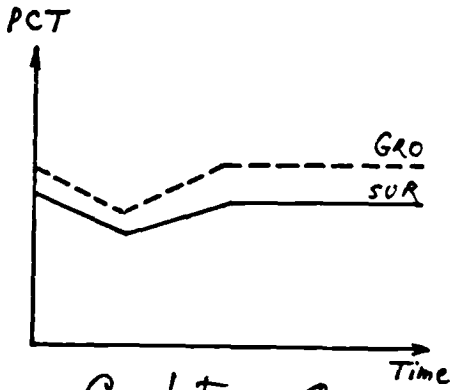
Example :



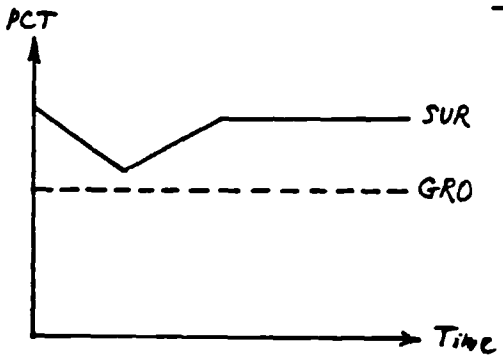
Possible Conditions :



Condition 1



Condition 2



Condition 3

Key : TOT Grand Total
GRO Mean Growth
SUR Mean Survival

In condition III, the rise and fall of the general PCT is actually more affected by the rise and fall of Survival rather than Growth. This is the least desirable condition for the promotion of professional growth in novices as there is little variation in terms of Growth. Actions to be taken to promote elements of Growth becomes the major focus in this case.

In conclusion, to understand the nature of the general change in the PCT of the beginning teachers in their process of learning to teach in their first year of teaching requires an understanding of the pattern of interplay of the two constituent dimensions of mean Growth and mean Survival states which are composed of the five psychological states devised specifically in this research.

C. The primary and the secondary subgroups

Through the BTDQ cross-sectional study of the primary and secondary subgroups, it was found that the two groups differ significantly in Integration and mean Growth between TP2 and TP3 during which there were significant increases for the two items in the primary but none for the secondary.

Both subgroups followed the same pattern of lowering in mean Growth from TP1 to TP2, but, as stated previously, the primary increases again from TP2 to TP3 and then maintained the same level from TP3 to TP4. The final level of PCT was closer to the initial score at TP1. Though the secondary subgroup was also without any changes from TP3 to TP4, it remained at a level close to the 'trough' level, never regaining a level closer to the

initial one at TP1. The general conclusions from BTDQ study were also supported by the BTVQ findings: the primary subgroup, though encountering a more serious traumatic 'shock' than its secondary counterpart, could regain some of their PCT during the adjustment phase though little improvement from then till the end of the year. For the secondary subgroup, the condition was the same as the whole group: no evident regaining of general PCT since the 'shock' at TP2. From these analyses, it is possible to suggest that studies of more context-specific groups would highlight more variations in development and problems in the process of learning to teach.

D. Revision of the model

In the light of the findings in the research, a few aspects of the research model need revision.

The focus of explanation of the general PCT has to be shifted from the interplay of individual states to that of the two higher order states of mean Growth and mean Survival. Based on this revision, a redefinition of 'reality shock' with different cases as stated previously (see p. 222) is to be incorporated in the model as well as the three conditions for the explanations for the general pattern of change in general PCT elaborated on p. 224 and 227.

To be in line with the revision, the dominant states for individuals have to be identified in terms of Growth or Survival in-stead of more specific individual states.

Part III: Implications and Recommendations

Two broad areas for the implications and recommendations of this research are to be deal with, namely for further research and for support for professional development.

A. For further research

The new perspective developed for the study of the 'transitional crisis (reality shock)' makes it possible not only to locate this phenomenon but also capable to differentiate its nature, in terms of frequency and mode as presented in the three cases. More appropriate assis tance can then be offered to beginning teachers.

As for the process of learning to teach, since the interplay of conditions of the Growth and Survival for a pattern of general PCT may vary in distinctly different ways, it is possible for comparative study of the process of learning to teach is possible with groups of:-

a) beginning teachers of similar teacher education background in different school contexts,

b) novices of different teacher education background in similar school contexts,

c) novices of different time contexts in similar school contexts, e.g. two-month beginning teachers and the fourteen-month teachers, and

d) first year novices with same teacher education background and similar school contexts in different years.

Further, as the present model has been developed with reference to other models of

appropriate to different circumstances
transitional change (p. 89), it is feasible, with suitable modifications of the model developed in this research, to devise similar research instruments for more refined investigations into the nature of changes in transition caused by promotion, or from apprenticeship to actual practice in other professions.

As the model has also developed with reference to the model of the process of learning-to-learn, it is likely to stimulate research to investigate similar underlying dimensions of interplay in the process of learning in general since the process of learning to teach may be regarded as context- and time-specific within the more general set of 'learnings'.

Though the model on the process of learning to teach, by design, is specifically for the study of beginning teachers, it is logical to anticipate that it could be further extended into a model describing the transition of novice teachers into expert teachers, a model on the development of teachers as presented in a conceptual model in Fig. 4.1 (p. 85). In doing so, more empirical data on teacher development would have to be collected for further research or for more immediate planning purposes.

B. For support for professional development

1. From student teachers to beginning teachers: Building an induction model for first year beginning teachers

The analysis of the most important events/difficulties encountered indicated different foci at different time points.

There were more non-teaching tasks of various types to complete than learners expected in the period TP1 to TP2. In the adjustment phase between TP2 to TP3, though much less non-teaching work was required, more teacher / pupil and other-concern problems were consciously felt, such as 'handling problem pupils', 'organizing extra-curricular activities', 'matching appropriate teaching styles in classrooms'; and, in particular, the problems of 'classroom discipline control', time for 'lesson preparation' and 'heavy marking load'. In the stabilisation phase between TP3 and TP4, the problems of discipline, lesson preparation, handling problem pupils, marking and workload persisted but relatively fewer teacher-concern problems were detected and in general fewer problems were reported.

To build up beginning teachers' repertoire of teaching in the workplace situations, the process of learning to teach has to be consciously monitored by themselves through their teaching. Specifically :-

a) pedagogical content knowledge, i.e. 'the understanding of how to represent specific subject matter topics and issues in ways that are appropriate to the diverse abilities and interests of the learners' (Eisenhart & Borko, 1991, p. 142) should be enriched;

b) pedagogical reasoning should be sharpened i.e. a process of transforming subject matter 'into forms that are pedagogically powerful and yet adaptive to the variations in ability and background represented by students' (Shulman, 1987, p.15 in Eisenhart & Borko, 1991, p. 143); and

c) the gradual realising help should given to stimulate of the inextricably complex relationships of personal learning and the external sociocultural contextual impacts and demands.

In view of the above needs and findings, a 'school-based induction model for first year beginning teachers' is formulated in Fig. 8.2 (p. 234).

A practical orientation for the newly recruited beginning teachers can be undertaken. They are to be informed of the basics of the schools before the school term starts in September; but, psychologically, beginning teachers would be more ready for the impact of 'real work' if they were to acquaint themselves with the schools before the beginning of term.

During the familiarisation phase in the first two months, if for practical reasons, the novices are not allocated a lesser load as some administrators would want them to work an 'equal load', clerical support should be provided if the administrators want efficiency and accuracy ! As the marking and workload are so enormous especially in the Hong Kong context, work-management skills have to be developed in novices to assist them and to ensure the availability of more efficient methods in managing their daily tasks.

Since much closer and more frequent contacts are required in this period, a supporting system headed by a senior staff member who would be responsible for the novices' personal and professional matters is needed.

Since the first two months are generally the 'transitional crisis' for novices, a set of stress-management skills should be developed to be readily available for those who are in need of them; a counselling service for novices is important at this moment especially for the most depressed. It is not surprising in Hong Kong to discover that much counselling work is planned for students, but none for teachers, especially novices. Lastly, the most central theme in induction is the provision of opportunities for novices to continue their 'unfinished task of learning to teach' through a) regular group experience-sharing sessions as requested by them through their views expressed in BTVQ, b) more release time for lesson preparation and teaching resources collecting as this would relieve much pressure from the perceived problems of insufficient lesson preparation time and insufficient teaching materials. Time for reflection is actually part of the crucial process of achieving pedagogical expertise and developing more pedagogical content knowledge with improving pedagogical reasoning in real workplace contexts, i.e., a gateway to professional expertise in teaching. Evaluation to provide adequate feedback for novices is absolutely essential; but, as the first two months are hard times for novices, it is more apt to initiate formative evaluation by themselves with appropriately selected means acceptable to the school administration, or better, just to allow them to work on their own.

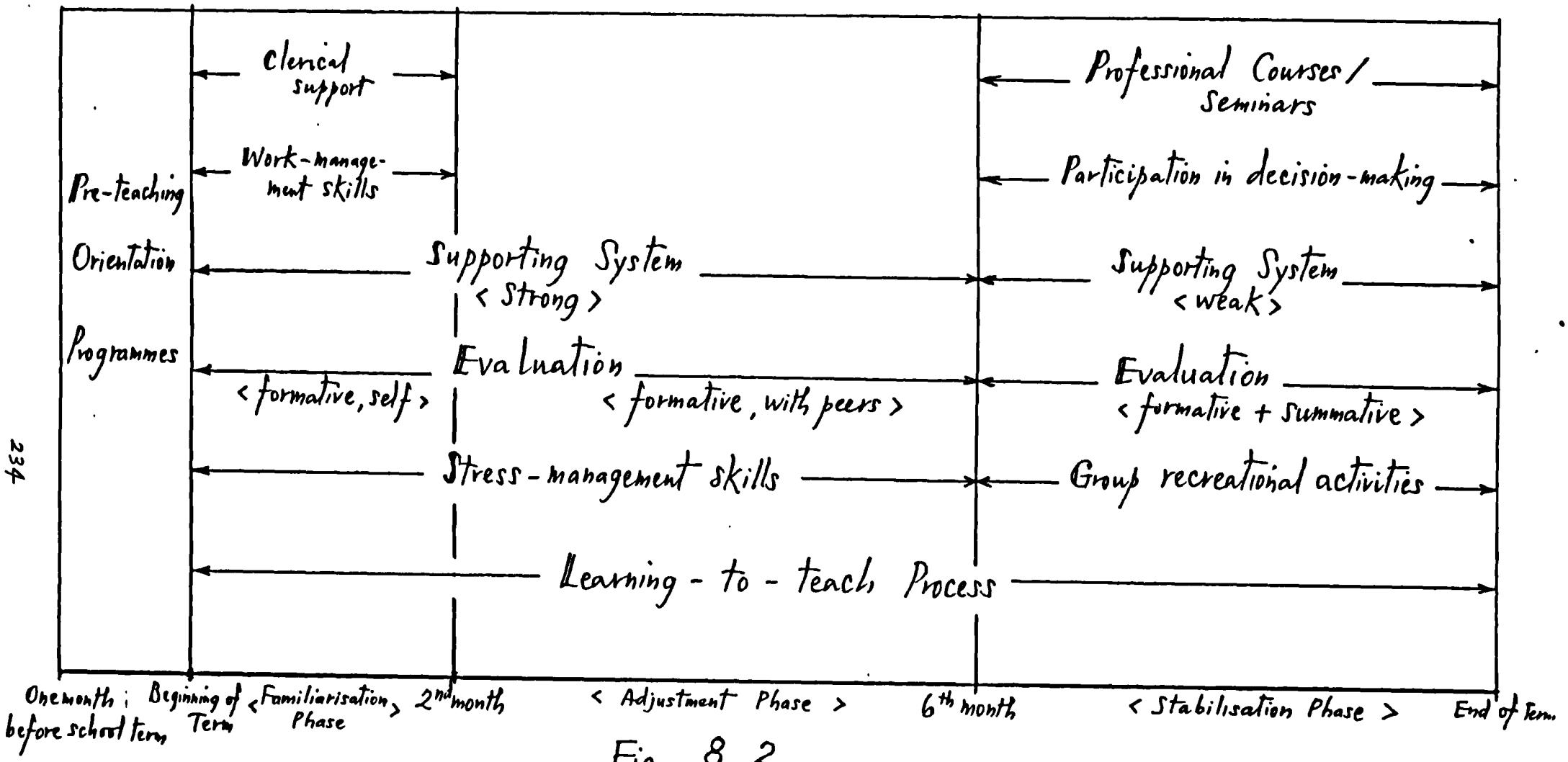


Fig. 8.2

A School-based Induction Model for First Year Beginning Teachers

The end of the second month of teaching, as revealed in the findings, would probably be the most difficult time in their first year teaching and a 'crisis' from which they would deviate in their trends of growth. It is thus advisable to leave them even more 'personal psychological space' to manoeuvre their individual 'process of learning to teach' and other interpersonal and technical skills with the supporting system providing strong (preferably unconditional ?) supports if requested because novices require as much (if not more) self-esteem as any other colleagues. Throughout the second to sixth month period, evaluations could be extended to include peer lesson observations as they might initiate periodical discussions in peer experience-sharing sessions with the moral support of school authorities, but not necessarily their presence (as found by Bullough et al. (1992):

> 'Perhaps the most useful aspect of the seminar had nothing to do with our [professionals] presence at the meetings or absence but rather with simply being with other first year teachers who could emphasize with what was being experienced and who could draw upon their experiences to offer suggestions and support...'
> (Bullough et al., 1992, p.203)).

As Dunn and Taylor (1990) stated, experts may not be 'seeing' and 'selecting' the same set of information as novices in problem-solving, and thus 'expertise' takes much time to learn because this gap has to be consciously 'narrowed' in both parties. To learn from peers would be within the 'narrowest' scope . If what matters is context-specific knowledge, experiences of specific contexts would be a powerful source for learning, not just from 'expertise' if more direct access to it is available.

By the third period between the sixth month and the end of the term in the stabilisation phase of the model, besides the consistently developing process of learning to teach, changes in the other aspects of induction are required. By the second half of the first year, as reflected in the BTVQ findings, the 'survival' group of novices request professional courses to attend and for the first time in the year many suggestions were offered. It is recommended then at this time of the year that professional courses or seminars be more frequently organized for novices on topics of their own choices and preferences, not because they are more at ease with their workplace environment (which is on the contrary as stressful as ever as reflected in the persistent levels of Perplexity and Control Anxiety), but because they are more in need of theoretical support in the form of context-specific knowledge. Novices should be provided with more channels to offer their suggestions to the school decision-making bodies not because they begin to have more 'substance' and courage to express them, but because they need to be suitably respected and admitted as true members of the work force; if views offered are listened to and adopted then it would be regarded as a sure sign of acceptance in the socio-political subculture of the school, a closer step to professional maturity.

To alleviate possible tensions with colleagues and from work pressure, novices are encoureged to be actively involved in the group recreational activities more frequently as they are becoming more open to other colleagues by the second half of the year (as far the Hong Kong context is concerned); better mutual

understanding would be more possibly developed through these activities.

2. Teaching Experience

From the findings in the BTVQ and interview studies, views on personal impressions of teaching experience are listed as follows:

'experience is more important',

'many failure experiences,..',

'patience and experience are important for development',

'enjoyable and happy experience',

'... [reference for] teaching experience is entirely from the teaching practice experience',

'experience [is] more important than theory...'

'a painful experience; there exists such a gap between the reality and the ideal'

'... I usually imitate what my teacher in the secondary has done to me...',

'...much is learnt through experience',

'...learning to teach by myself...' and

' I have learnt from my colleagues and from my experience'.

The beginning teachers in this research echoed with Richardson (1990) that '...for many teachers, isolated as they are in the classroom, it [experience] is an extremely potent teacher.' (p.12). But, simply staying in the workplace working may not be

enough automatically to gain experience conducive to professional growth; 'improvement of the teacher-learning process requires acknowledging and building upon teachers' experiences, and promoting reflection on those experiences' (Richardson, 1990, p. 12). As illustrated clearly in the findings of the research, the mean 'Growth' state scores, especially the Reflection state scores were more influential than others in determining the general patterns of change in PCT of the totals; and, the Reflection profiles were mostly of higher level and more obvious in change across time points than any other individual states. Perhaps the impact of the 'transitional crisis' would have awakened the 'set of personal learning robots' in the individual beginning teachers, 'disrupting and breaking of existing skills and the establishment of new attitudes and personally strange ways of thinking, feeling and behaving' (Thomas & Harri-Augstein, 1985, p. 329) during the first few months of teaching. With a drop to a 'trough', they have to go through a series of reflective efforts involving processes of 'awareness raising' within themselves as described in Harri-Augstein's process of learning-to-learn (Harri-Augstein in Barrister, 1985, p.63 & ref. p. 82) in order to survive and grow in later phases. The success or failure of this 'inner conversations' would have determined the patterns of change in PCT as depicted in the profiles of states in this research from TP2 to TP4 in all groups. It is natural to conclude that, to grow professionally in teaching, reflection in the processes of learning to teach is of great importance. But, it remains to be seen through further research, how reflection can

be promoted in the beginning teachers when they are plagued with perplexity and control anxiety at the first impact of reality in classrooms and schools.

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Appendix 1

Distributions of Questionnaire Items in the Beginning Teacher Development Questionnaire

	State				
	1	2	3	4	5
tructural Influences					
) Classroom Level	8, A5, A6, A7, A8	14, 18, 19, 20, B7	21, 22, 23, 24, 25, 26, 29	34, 39, D4, D5, D6, D7, D8	43, 44, E3, E4, E5, E6, E7
) School/ Institutional Level	1, 2, 3, A9, A10	11, 17, B8, B9, B10	C8, C9, C10	40, D9, D10	E8, E9, E10
eacher's ersonal Experiences					
) Beliefs/Theories/ Attitudes	4, 6, 7, 9, 10	12, 13, B1, B2, B3	27, 28, C1, C2, C3	31, 32, 36, 37, 38, D1	41, 42, 45, 47, 48, E1
) Teacher Education Course Experiences	5	—	30	—	—
) Learning Experience as Students in Schools	—	B4	—	—	—
ersonal Influences					
) Pupils	A1, A2	B5, B6	C4, C5	35, D2	49, 50
) Colleagues/ Administrators	A3, A4	15, 16	C6, C7	33	46
) Parents of Pupils	—	—	—	D3	E2

(For details of items ref. Appendix 2)

Appendix 2

Items for Questionnaire 1

State 1 : Perplexity

(1)* I am surprised by the real situations I meet in school.

(2)* Facing school situations, I feel puzzled and at a loss.

(3)* I encounter school events I have not seen before.

(4)* Thinking about teaching after school makes me feel uncomfortable.

(5)* My previous conceptions of teaching do not match with the actual school situation.

(6)* I find my previous view on teaching too idealistic.

(7)* I am experiencing changes in my personal view towards life in school.

(8)* I feel a sense of anxiety when facing my classes.

(9)* I question my suitability for teaching.

(10)* I think of leaving my teaching post.

A1 * Some pupils are unexpectedly difficult to deal with.

A2 Pupils are more friendly and respectful to me than I expected.

A3 * Colleagues help me in my job.

A4 * Instructions from the principal/school administrators are more demanding than I expected.

A5 * My personal time-table for teaching is unexpectedly heavy.

A6 * The workload of marking pupils' assignments surprises me.

A7 * It is harder to motivate pupils than I thought.

A8 * Teaching methods that I have learnt previously seem to be impractical.

A9 * I view school regulations and rules from an entirely new perspective.

A10 * I have to re-orientate my views about the functions of extra-curricular activities in school.

Note: * : Be reversely scored for calculation of General P.C.T.

Ques. II - State 2 : Control Anxiety

(11)* I feel exhausted after school.

(12)* My teaching is guided by immediate situations.

(13)* I feel a sense of 'swim or sink'.

(14)* I rely on my detailed plans for lessons.

(15)* I imitate more experienced colleagues in dealing with my own school work.

(16)* I am careful of my image in the eyes of colleagues and school administrators.

(17)* I follow the decisions made during the subject panel meetings to the letter.

(18)* I concentrate on survival in class teaching.

(19)* I am mainly concerned with the maintenance of classroom control.

(20)* I abandon activities which have led to unrest in my class.

B1 * I feel I must solve problems in my class as soon as they happen.

B2 * My previous thinking in education seems to be unhelpful in solving practical problems.

B3 * I try hard to deal with problems in school work myself without consulting fellow teachers.

B4 * My previous experience as a student is an important source of reference for class teaching.

B5 * I find the attitudes of a few pupils very threatening indeed.

B6 * It is difficult for me to maintain a positive learning atmosphere in class.

B7 * I feel my pupils are not learning very much.

B8 * The teacher's guides or notes are important sources for me to rely on in teaching.

B9 * I feel comfortable using a variety of audio-visual aids.

B10 * I feel too busy to pay much attention to extra-curricular activities organised by colleagues.

Note : ★ : Be reversely scored for calculation of General P.C.T.

Ques. 11 – State 3 : Experimentation

(21) I am confident enough to try a variety of teaching methods.

(22)* I find my prime aim is to keep up with the progress of lessons as scheduled.

(23) I find myself thinking about the needs of pupils.

(24) I am beginning to develop my own ways of teaching in my classes.

(25) I am beginning to try methods in my class that are not usually used by colleagues in theirs.

(26) I feel my teaching is starting to benefit from my successes and failures in previous lessons.

(27) I am willing to use my own judgement in teaching.

(28) I accept that the teaching situations I encounter are necessary parts of my professional growth.

(29) I am gaining confidence in the management of my class.

(30) I find solutions to problems in teaching from the knowledge gained in my teacher education course.

C1 I pay attention to the effectiveness of my teaching.

C2 I am aware I have been holding misconceptions about teaching.

C3 I am beginning to use my own experiences of learning to help me understand my pupils' learning.

C4 I am beginning to use group activities in my lessons.

C5 I find I am beginning to be able to attend to slower pupils.

C6 I find I am beginning to discuss my teaching problems with colleagues.

C7 I am finding confidence to express my personal views towards school activities to the school administrators during meetings.

C8 If asked, I give suggestions for improvement in class/school facilities to the school administrators.

C9 I find myself beginning to participate more actively in out-of-class school activities.

Note : * : Be reversely scored for calculation of General P. C. T.

State 3: Experimentation

C10 I am beginning to take an active role in the general discipline of the school.

Ques. 1 – State 4: Reflection

(31) I make use of my experiences of failures in teaching to improve my future teaching.

(32) Successful teaching experiences are the bases for planning my future lessons.

(33) I think seriously about my fellow teachers' criticisms of my work.

(34) When I am designing and preparing lessons, I pay quite a lot of attention to sustaining my pupils' interests in learning.

(35) Individual needs and interests of my pupils are important things to consider in class teaching.

(36) I am beginning to feel intrinsic satisfaction in my teaching .

(37) In spite of some frustrations, I find teaching rewarding.

(38) I feel the need of theoretical studies for a better understanding of practical teaching.

(39) I begin to feel interested in exploring different ways to make my lessons more effective.

(40) I like to discuss teaching problems with others outside school time.

D1 I am finding ways to put my ideals in education into practice.

D2 I try to deal with individual pupils' learning problems.

D3 I find the cooperation of parents important for improving my pupils' performance.

D4 I try to match the mode of assessment to the abilities of the classes I teach.

D5 I supplement textbook content with different class activities.

D6 I consider carefully before my lessons whether it is practical and efficient to use audio-visual aids or not.

D7 In assessing individual pupils, I pay more attention to pupils' understanding rather than to right or wrong answers.

State 4 : Reflection

D8 I seek to understand reasons for school management practices.

D9 I think about my teaching effectiveness with reference to the general context of my school.

D10 I find that problems of individual pupils in my school are closely related to their home and community environments.

Ques 1 – State 5 : Integration

(41) I am able to use previously gained knowledge with practical teaching without difficulties.

(42) I regard teaching as a complex process which involves considerations of factors from many fields of teaching and learning.

(43) I conduct my lessons with spontaneous and useful changes to the immediate situational needs in classes.

(44) I work to achieve meaningful learning in lessons rather than simply covering the teaching syllabuses required.

(45) I have been developing my own mode of teaching according to my own belief in education.

(46) I feel I teach as efficiently as my colleagues.

(47) I feel I am now a true professional teacher.

(48) I feel I am really developing my personal potential in teaching.

(49) I treat each pupil as a unique individual and cater for his/her needs as far as possible.

(50) I introduce to my pupils the relevance of lesson content to their personal and social well-being.

E1 I feel I am ready for new challenge in teaching.

E2 I feel I am adequately sensitive to changes in the classroom learning atmosphere.

E3 I evaluate pupils' performance by comparing it with previous performance.

E4 I encourage my pupils to develop their own exploration in and outside the classroom.

E5 I prepare extra reference materials/notes for my pupils' specific needs.

E6 I provide counselling and guidance for individual pupils of mine during and after school hours.

E7 I deal with individual pupils' problems through my close contact with their parents.

E8 I question the applicability of some school regulations and rules.

State 5 : Integration

E9 I recommend constructive suggestions for improvement in school management to the school administration whenever I feel appropriate.

E10 I feel attending seminars and short courses would be particularly helpful for my professional development.

Appendix 3

Tables to show the Distribution of the Total Population, the samples, and the valid responses received in the Pilot Study done between mid-Nov to Mid-Dec 1989
(BTDQ PILOT STUDY)

The Two-month Beginning Teachers			
Course	Total Popu.	Sample Size	Reponses
Two-year	168	100	66
Three-year	175	100	

The Fourteen-month Beginning Teachers			
Course	Total Popu.	Sample Size	Responses
Two-year	147	70	39
Three-year	111	50	

Appendix 4

TABLE A4.1

Indices of Item-total Correlations and Coefficient Alpha of STATE ONE Items

(Revised Version, 1/2/1990)

Item No.	Item - total Correlations
27* (4)#	0.395
35 (5)	0.420
40 (10)	0.539
41 (A1)	0.416
44 (A6)	0.396
59 (A4)	0.380
62 (9)	0.453
69 (8)	0.480
92 (2)	0.607
94 (1)	0.554
Coefficient Alpha	0.789

* : Item number as appeared in Questionnaire for distribution: (ref. Appendix 8)

: Item number as appeared in Original set for reference. (ref. Appendix 2)

TABLE A4.2

Indices of Item-total Correlations and Coefficient Alpha of STATE TWO Items

(Revised Version, 1/2/1990)

Item No.	Item – total Correlations
9*(22)#	0.219
13 (19)	0.329
19 (B7)	0.399
31 (18)	0.340
32 (B5)	0.332
37 (C2)	0.272
55 (B10)	0.267
74 (B2)	0.252
83 (13)	0.317
97 (B6)	0.418
Coefficient Alpha	0.646

* : Item number as appeared in Questionnaire for distribution;

: Item number as appeared in Original set for reference.

TABLE A4.3

Indices of Item-total Correlations and Coefficient Alpha of STATE THREE Items

(Revised Version, 1/2/1990)

Item No.	Item - total Correlations
14*(C5)#	0.419
47 (29)	0.416
57 (24)	0.411
60 (23)	0.459
63 (C10)	0.367
71 (C8)	0.476
77 (C7)	0.398
82 (C4)	0.350
95 (21)	0.492
98 (C1)	0.441
Coefficient Alpha	0.756

* : Item number as appeared in Questionnaire for distribution;

: Item number as appeared in Original set for reference.

TABLE A 4.4

Indices of Item-total Correlations and Coefficient Alpha of STATE FOUR Items

(Revised Version, 1/2/1990)

Item No.	Item - total Correlations
6*(39)#	0.499
34 (D2)	0.549
51 (36)	0.568
52 (37)	0.421
56 (D5)	0.384
61 (35)	0.358
78 (31)	0.536
81 (D1)	0.528
84 (D7)	0.432
85 (34)	0.376
Coefficient Alpha	0.791

* : Item number as appeared in Questionnaire for distribution;

: Item number as appeared in Original set for reference.

TABLE A 4.5

Indices of Item-total Correlations and Coefficient Alpha of STATE FIVE Items

(Revised Version, 1/2/1990)

Item No.	Item - total Correlations
4*(45)#	0.393
15 (44)	0.425
29 (E2)	0.359
39 (46)	0.527
42 (47)	0.290
45 (E7)	0.208
48 (E1)	0.557
80 (48)	0.646
87 (49)	0.225
96 (E5)	0.405
Coefficient Alpha	0.730

* : Item number as appeared in Questionnaire for distribution;

: Item number as appeared in Original set for reference.

Appendix 5

Distributions of Questionnaire Items accepted from the Beginning Teacher Development Questionnaire after Item Analysis on 1/2/1990

	State				
	1	2	3	4	5
1. Structural Influences					
a) Classroom Level	8, A6	18, 19, B7, 22[1]	21, 23, 24, 29	34, 39, D5, D7	44, E5, E7
b) School/ Institutional Level	1, 2	B10	C8, C10	—	—
3. Teacher's Personal Experiences					
a) Beliefs/Theories/ Attitudes	4, 9, 10	13, B2, C2[2]	C1	31, 36, 37, D1	45, 47, 48, E1
b) Teacher Education Course Experiences	5	—	—	—	—
c) Learning Experience as Students in Schools	—	—	—	—	—
2. Personal Influences					
a) Pupils	A1	B5, B6	C4, C5	35, D2	49
b) Colleagues/ Administrators	A4	—	C7	—	46
c) Parents of Pupils	—	—	—	—	E2

2) : Taken from unselected items of Stage 3 and passed the Test of Item-total Correlations and Cronbach Alpha Coefficient with the other eight remaining Stage Two items.

Appendix 6

Questionnaire on Beginning Teaching

This Questionnaire is designed to gather information about your full-time school work during the past .

Please answer the following questions and give your answers on separate blank sheets. Thank you for your co-operation.

During the past what are the most important events / difficulties that you have encountered in your primary/secondary* teaching ?

Please list as many as you can, if possible, according to their order of importance to your school work.

(B) Choose two of the above mentioned events/difficulties and for each of them describe

(1) how frequently you have encountered it,
(e.g. every lesson, daily, no.of times in a week, etc.)

(2) under what conditions you have come across it,
(e.g. in/out of classroom, during/after lesson,
in group/individually, with pupils/with staff)

(3) how you have dealt with it,
(e.g. your feelings, coping strategies, etc.)

(4) how you have solved it, if not, why and

(5) what experience/conclusion you can draw from it.

(C) Please give your general comments on

(1) your overall impression of the teaching experience,

(2) the practicability of knowledge learnt from the teacher education courses,

(3) the help you would expect from professionals

(D) Personal Data:

(1) Name:_____ (2) Sex: M/F*

(3) School:_____

(4) Teacher Education Institute attended:
G.C.E. / N.C.E. / S.R.B.C.E. / T.T.C.*

(5) Course attended: Two-year / Three-year*

* Delete if inappropriate.

Thank you for your co-operation!

Appendix 7

Pilot Study on the Process of Learning to Teach (1)
Summary and Initial findings of Questionnaire Part Two

The Part Two of the draft Beginning Teacher Development Questionnaire (ref. Appendix 1) was designed in early May, 1989 and was sent to a sample of forty beginning teachers in Hong Kong in late May for pilot study. By mid-June, 1989, nineteen teachers returned their responses to the Questionnaire: eight teaching in primary classes and eleven in secondary forms. The following are the major findings reported in different sections as suggested in the original Questionnaire.

Findings from the Summary of the Responses of the Eight Primary Beginning Teachers in Hong Kong after teaching for nine months

Section A: the Most Important Events/Difficulties encountered

The most important events/difficulties suggested are listed in descending order:

(1) Adaptation to the new school environment,

(2) Classroom discipline control,

(3) Heavy workload: e.g. marking of assignments, other non-teaching duties.

(4) Insufficient time for lesson preparation,

(5) Communications with pupils: e.g. p.1 and 2 pupils,

(6) Catering for individual pupils' needs

(7) Relationships with colleagues and administrators,

(8) Mismatching of subjects to teach and subjects learnt as elective subjects in the teacher education courses,

(9) Inadequate subject knowledge for teaching,

(10) Dealing with parents/guardians,

(11) Preparing pupils for inter-school competitions, and

(12) Inspections from inspectors, Education Department.

Section B: Categorization of beginning teachers according to their treatment and perceptions of their school work with reference to the criteria recommended in the Five-phase model proposed (ref. Appendix 2)

State Two: Struggling for Survival* (Control Anxiety)

Respondent	Characteristics
2P1	- great mental stress felt: easily angered by trivial matters, - feeling disappointed sometimes - adopted strict and very classroom control methods for fear of loosing control
3P6	- avoid using methods which creates annoyance and frustrations even if they were desirable - felt angry and annoyed when being confronted by deviant pupils --- using threats, scolding and even segregation measures to punish - did not feel satisfying in teaching --- pay too low and poor promotion prospects
2P8	- used firm control strategies to keep class discipline - felt helpless in many of the problems raised - felt stress of heavy workload with considerable sacrifice in private time

* Original term for pilot Study

Section B (Continued)

State Three: Testing Personal Conceptions* (Experimentation)

Respondent	Characteristics
2P2	- facing problems with patience and courage
	- willing to discuss problems with colleagues
	- developing an easy-going attitude towards staff
	- Learning by doing
2P3	- felt frustrated especially in the first two months
	- more attention paid to pupils and their work
3P4	- experienced transitions from being frustrated to being concerned for pupils' performances in class
	- felt colleagues becoming more caring and considerate
	- experience-sharing group formed by respondent and other new teachers

* Original Term for Pilot Study :

State Four: Reflecting and Searching for Meaning* (Reflection)

Respondent	Characteristics
3P5	- concentrated on adaptation of Activity Approach theory into practice - able to stand on her own in dealing with other colleagues - developing her own teaching style - eager to understand ways to improve communications with primary 1 and 2 pupils - regarded sharing of experience important
3P7	- felt adaptation to specific needs of pupils more important than administrators' 'authoritative' orders - explored ways to deal with individual pupils - reflected before putting plans into practice

* Original Term for pilot Study.

Section C: General Comments

I. on Overall Impression of Teaching

- important
- meaningful
- challenging
- difficult
- others: heavy workload, unreasonable pay, and little job satisfaction

II. on Practicability of Knowledge learnt from teacher education courses

- not practical: difficult to put theory into practice
- not dynamic enough
- knowledge learnt no digested
- almost nothing learnt
- only practical guides on audio-visual aids helpful
- wrong curriculum emphasis

III. on Expectations from the Professionals

- more practical knowledge on teaching
- more subject matter knowledge for teaching
- guide to further studies
- methods to relieve mental stress
- sharing of teaching experiences
- developing problem-solving skills
- recent development in developmental psychology
- knowledge of the Hong Kong Educational System

IV. on the Design of the Questionnaire

- helpful for teachers to evaluate, reflect and make complaints of their teaching experiences
- clear objectives with reasonable items set
- useful for brain-storming
- too much writing needed
- not easy to quantify
- complex in structure
- questions about improvement in teacher education can be asked

Personal Data of the Respondents (Primary)

- Sex: M --- 2
  F --- 6
- Classes: Primary 1 --- 5
  Primary 2 --- 5
  Primary 3 --- 6
  Primary 4 --- 4
  Primary 5 --- 4
  Primary 6 --- 2

-Subjects teaching:

English --- 7

Mathematics --- 6

Social Studies --- 6

Chinese --- 5

Health Education --- 4

Others: Science, Physical Education, Music, Art and Design.

Findings from the Summary of the Responses of Eleven Secondary Beginning Teachers in Hong Kong after teaching for nine months

Section A: The Most Important Events/Difficulties encountered

The most important events/difficulties suggested are listed in descending :

(1) Classroom discipline control

(2) Heavy workload: e.g. marking of assignments, other non-teaching duties

(3) Dealing with pupils with behavioural problems

(4) Dealing with pupils with learning problems

(5) Relationships with colleagues and administrators

(6) Insufficient time for lesson preparation

(7) Organizing extra-curricular activities

(8) Lack of suitable teaching skills

(9) Inadequate subject knowledge for teaching

(10) Teacher's image in pupils' eyes

(11) Adaptation to the school environment

(12) Management of mixed ability classes

(13) Inadequate teaching resources/school facilities

(14) Mismatching of subjects to teach and subjects learnt as elective subjects in teacher education courses

Section B: Categorization of beginning teachers according to their treatment and perceptions of their school work with reference to the criteria recommended in the Five-phase model proposed (ref. Appendix 2).

State Two: Struggling for Survival

Respondent	Characteristics
2S2	- did not feel teaching challenging in that school, a bit boring - isolated from colleagues of much older age - prepared to leave the teaching profession for further study
2S4	- feeling helpless as all problems raised are not yet solved - admitted that being a teacher one was doomed to constant stress from challenges from pupils and from the school structure - feeling tired and wanting to leave the teaching profession - has tried hard but with little sense of success
2S5	- focused on discipline control - feeling inadequate in managing class teaching problems due to a poor background about teaching - bad tempered at times because of frustrations in dealing with problem pupils - has tried many ways to cope with management problems

3S6	- though confronted by problems like heavy workload, inadequate teaching repertoire and poor classroom control, he could take up the challenges - through personal reflections and aid from colleagues, he could try to solve problems in his own ways - regarded teaching as not easy and require a wide scope of knowledge
3S10	- focused on improving pupils' learning effectiveness - designed specific ways to suit needs of own classes at times - regarded promoting pupils' interest in learning the most important role of the teacher
3S9	- effort exerted to establish good teacher-pupil rapport through evaluation of personal experience - willing to gather pupils' and colleagues' opinions to promote personal growth - extra effort used in preparing lessons during holidays

State Four: Reflecting and Searching for Meaning

Respondent	Characteristics
2S3	- made full use of opportunities to develop materials for colleagues to use in moral and civic education programmes - able to evaluate her work and adjust her methods in classroom management and class teaching

3S7	- felt tired and worn-out under heavy stresses of workload - resort to 'chalk and talk' and minimized the use of aids - felt very frustrated in class control; slight improvement shown towards the recent months
3S8	- felt too tired and busy even to think about whether problems could be tackled by asking advice of the more experienced teachers - regarded education in Hong Kong as dying - put blame on the 'wrong' policy in education by the government - no solution for most problems raised

State Three. Testing Personal Conceptions

Respondent	Characteristics
2S1	- enjoyed teaching and liked the school - has exerted utmost effort to cope with the tight school time-table - took initiative to get help from experienced colleagues - has cared for pupils' effectiveness in learning

2S3 (continued)	- concerned of pupils' quality of learning rather than marks
	- decided to improve herself by attending short courses after school
3S11	- feeling very happy when dealing with pupils
	- focused on individual pupils' needs
	- able to use her own judgements to develop her own ways of teaching
	- dare to challenge questionable school administrative measures

Section C General Comments

I on Overall Impression of Teaching

- teacher-pupil relationship as one of the most important aspect
- teaching as a challenging profession
- teaching as a difficult job
- teaching requires a wide repertoire of skills not learnt in preservice teacher education courses
- workload heavy and much work not directly related to teaching
- requires teachers to learn without formal help

II on Practicability of knowledge learnt from teacher education courses

- not practical
- teaching practice important
- educational technology topics practical
- some topics rather helpful e.g. classroom management, teaching strategies, and a few topics in educational psychology
- of very little help only

III. on Expectations from the Professionals

- organizing short courses and seminars for exchange of experience and new ideas
- professional guidance on counselling skills, communication skills, and developmental psychology for children of the school ages
- refresher courses on the content of subjects teaching
- information and guides for further studies
- introducing ways to relieve psychological stresses
- suggestions for the lessening of stress from heavy workload
- remedial courses for teachers teaching non-elective subjects
- suggestions for the improvement of the quality of pupils' learning

IV on the Design of the Questionnaire

- a chance to evaluate ones own work as a teacher
- quite good in design· detailed, comprehensive
- too much writing required
- tabulation for some items preferred
- more detailed instructions recommended
- some events are not easy to quantify: frequency count not applicable at times
- Items B3 and B4 not easy to differentiate

Personal Data of the Respondents (Secondary)

- Sex. M --- 2 F --- 9
- Classes

Secondary 1	--- 11	Secondary 2	--- 10
Secondary 3	--- 6	Secondary 4	--- 2
Secondary 5	--- 1	Form Lower 6	--- 1
		Form Upper 6	--- 1

- Subjects teaching.

Chinese --- 5 Mathematics --- 4

Integrated Science --- 3

Others Art and Design, English, Chinese History, Home Economics, Computer Studies, Geography, Physical Education, Religious Knowledge and Economic and Public Affairs.

Appendix B. *

Instructions

This Questionnaire is designed to gather information about your experience in your full-time teaching during the period under review.

- Consider how often you have experienced the content of each of the following statements.
- Indicate your response by circling the number on your response sheet corresponding to each item in the Questionnaire. Thank you

---

1= almost never 2= rarely 3= sometimes 4= often 5= most of the time

(1)	I abandon activities which have led to unrest in my class	(1)	1	2	3	4	5
(2)	I seek to understand reasons for school management practices	(2)	1	2	3	4	5
(3)	I regard teaching as a complex process which involves considerations of factors from many fields of teaching and learning	(3)	1	2	3	4	5
(4)	I have been developing my own mode of teaching according to my own belief in education	(4)	1	2	3	4	5
(5)	I provide counselling and guidance for individual pupils of mine during and after school hours	(5)	1	2	3	4	5
(6)	I begin to feel interested in exploring different ways to make my lessons more effective	(6)	1	2	3	4	5
(7)	Colleagues help me in my job.	(7)	1	2	3	4	5
(8)	I encourage my pupils to develop their own exploration in and outside the classroom	(8)	1	2	3	4	5
(9)	I find my prime aim is to keep up with the progress of lessons as scheduled.	(9)	1	2	3	4	5
(10)	I find I am beginning to discuss my teaching problems with colleagues	(10)	1	2	3	4	5
(11)	I encounter school events I have not seen before.	(11)	1	2	3	4	5
(12)	Pupils are more friendly and respectful to me than I expected	(12)	1	2	3	4	5
(13)	I am mainly concerned with the maintenance of classroom control.	(13)	1	2	3	4	5
(14)	I find I am beginning to be able to attend to slower pupils	(14)	1	2	3	4	5
(15)	I work to achieve meaningful learning in lessons rather than simply covering the teaching syllabuses required.	(15)	1	2	3	4	5
(16)	I rely on my detailed plans for lessons.	(16)	1	2	3	4	5
(17)	I accept that the teaching situations I encounter are necessary parts of my professional growth.	(17)	1	2	3	4	5
(18)	I find solutions to problems in teaching from the knowledge gained in my teacher education course	(18)	1	2	3	4	5
(19)	I feel my pupils are not learning very much.	(19)	1	2	3	4	5
(20)	I imitate more experienced colleagues in dealing with my own school work.	(20)	1	2	3	4	5

* Questionnaire One for Pilot Study

1= almost never 2= rarely 3= sometimes 4= often 5= most of the time

21)	I feel exhausted after school.	(21) 1 2 3 4 5
22)	I am beginning to try methods in my class that are not usually used by colleagues in theirs	(22) 1 2 3 4 5
23)	I evaluate pupils' performance by comparing it with previous performance	(23) 1 2 3 4 5
(24)	It is harder to motivate pupils than I thought	(24) 1 2 3 4 5
(25)	My personal time-table for teaching is unexpectedly heavy	(25) 1 2 3 4 5
(26)	I consider carefully before my lessons whether it is practical and efficient to use audio-visual aids or not	(26) 1 2 3 4 5
(27)	Thinking about teaching after school makes me feel uncomfortable.	(27) 1 2 3 4 5
(28)	I have to re-orientate my views about the functions of extra-curricular activities in school.	(28) 1 2 3 4 5
(29)	I feel I am adequately sensitive to changes in the classroom learning atmosphere	(29) 1 2 3 4 5
(30)	I find my previous view on teaching too idealistic	(30) 1 2 3 4 5
(31)	I concentrate on survival in class teaching.	(31) 1 2 3 4 5
(32)	I find the attitudes of a few pupils very threatening indeed	(32) 1 2 3 4 5
(33)	I conduct my lessons with spontaneous and useful changes to the immediate situational needs in classes	(33) 1 2 3 4 5
(34)	I try to deal with individual pupils' learning problems	(34) 1 2 3 4 5
(35)	My previous conceptions of teaching do not match with the actual school situation	(35) 1 2 3 4 5
(36)	I think seriously about my fellow teachers' criticisms of my work.	(36) 1 2 3 4 5
(37)	I am aware I have been holding misconceptions about teaching	(37) 1 2 3 4 5
(38)	The teacher's guides or notes are important sources for me to rely on in teaching.	(38) 1 2 3 4 5
(39)	I feel I teach as efficiently as my colleagues	(39) 1 2 3 4 5
(40)	I think of leaving my teaching post	(40) 1 2 3 4 5
(41)	Some pupils are unexpectedly difficult to deal with	(41) 1 2 3 4 5
(42)	I feel I am now a true professional teacher.	(42) 1 2 3 4 5
(43)	I recommend constructive suggestions for improvement in school management to the school administration whenever I feel appropriate	(43) 1 2 3 4 5
(44)	The workload of marking pupils' assignments surprises me	(44) 1 2 3 4 5
(45)	I deal with individual pupils problems through my close contact with their parents	(45) 1 2 3 4 5
(46)	I introduce to my pupils the relevance of lesson content to their personal and social well-being.	(46) 1 2 3 4 5
(47)	I am gaining confidence in the management of my class	(47) 1 2 3 4 5
(48)	I feel I am ready for new challenge in teaching	(48) 1 2 3 4 5

(1= almost never 2= rarely 3= sometimes 4= often 5= most of the time

(49)	I find that problems of individual pupils in my school are closely related to their home and community environments.	(49) 1 2 3 4 5
(50)	I follow the decisions made during the subject panel meetings to the letter.	(50) 1 2 3 4 5
(51)	I am beginning to feel intrinsic satisfaction in my teaching .	(51) 1 2 3 4 5
(52)	In spite of some frustrations, I find teaching rewarding	(52) 1 2 3 4 5
(53)	I feel attending seminars and short courses would be particularly helpful for my professional development	(53) 1 2 3 4 5
(54)	I am beginning to use my own experiences of learning to help me understand my pupils' learning	(54) 1 2 3 4 5
(55)	I feel too busy to pay much attention to extra-curricular activities organised by colleagues.	(55) 1 2 3 4 5
(56)	I supplement textbook content with different class activities.	(56) 1 2 3 4 5
(57)	I am beginning to develop my own ways of teaching in my classes	(57) 1 2 3 4 5
(58)	Successful teaching experiences are the bases for planning my future lessons.	(58) 1 2 3 4 5
(59)	Instructions from the principal/school administrators are more demanding than I expected	(59) 1 2 3 4 5
(60)	I find myself thinking about the needs of pupils	(60) 1 2 3 4 5
(61)	Individual needs and interests of my pupils are important things to consider in class teaching	(61) 1 2 3 4 5
(62)	I question my suitability for teaching	(62) 1 2 3 4 5
(63)	I am beginning to take an active role in the general discipline of the school.	(63) 1 2 3 4 5
(64)	My previous experience as a student is an important source of reference for class teaching.	(64) 1 2 3 4 5
(65)	I feel my teaching is starting to benefit from my successes and failures in previous lessons	(65) 1 2 3 4 5
(66)	I am able to use previously gained knowledge with practical teaching without difficulties	(66) 1 2 3 4 5
(67)	I try hard to deal with problems in school work myself without consulting fellow teachers.	(67) 1 2 3 4 5
(68)	I think about my teaching effectiveness with reference to the general context of my school.	(68) 1 2 3 4 5
(69)	I feel a sense of anxiety when facing my classes	(69) 1 2 3 4 5
(70)	I am willing to use my own judgement in teaching.	(70) 1 2 3 4 5
(71)	If asked, I give suggestions for improvement in class/school facilities to the school administrators	(71) 1 2 3 4 5
(72)	I am careful of my image in the eyes of colleagues and school administrators	(72) 1 2 3 4 5
(73)	I am experiencing changes in my personal view towards life in school.	(73) 1 2 3 4 5
(74)	My previous thinking in education seems to be unhelpful in solving practical problems.	(74) 1 2 3 4 5
(75)	I feel comfortable using a variety of audio-visual aids.	(75) 1 2 3 4 5
(76)	Teaching methods that I have learnt previously seem to be impractical.	(76) 1 2 3 4 5

1= almost never 2= rarely 3= sometimes 4= often 5= most of the time

(77)	I am finding confidence to express my personal views towards school activities to the school administrators during meetings.	(77) 1 2 3 4 5
(78)	I make use of my experiences of failures in teaching to improve my future teaching.	(78) 1 2 3 4 5
(79)	I feel I must solve problems in my class as soon as they happen	(79) 1 2 3 4 5
(80)	I feel I am really developing my personal potential in teaching	(80) 1 2 3 4 5
(81)	I am finding ways to put my ideals in education into practice.	(81) 1 2 3 4 5
(82)	I am beginning to use group activities in my lessons	(82) 1 2 3 4 5
(83)	I feel a sense of 'swim or sink'.	(83) 1 2 3 4 5
(84)	In assessing individual pupils, I pay more attention to pupils' understanding rather than to right or wrong answers	(84) 1 2 3 4 5
(85)	When I am designing and preparing lessons, I pay quite a lot of attention to sustaining my pupils' interests in learning	(85) 1 2 3 4 5
(86)	My teaching is guided by immediate situations	(86) 1 2 3 4 5
(87)	I treat each pupil as a unique individual and cater for his/her needs as far as possible	(87) 1 2 3 4 5
(88)	I view school regulations and rules from an entirely new perspective	(88) 1 2 3 4 5
(89)	I feel the need of theoretical studies for a better understanding of practical teaching	(89) 1 2 3 4 5
(90)	I find myself beginning to participate more actively in out-of-class school activities	(90) 1 2 3 4 5
(91)	I question the applicability of some school regulations and rules	(91) 1 2 3 4 5
(92)	Facing school situations, I feel puzzled and at a loss	(92) 1 2 3 4 5
(93)	I try to match the mode of assessment to the abilities of the classes I teach	(93) 1 2 3 4 5
(94)	I am surprised by the real situations I meet in school	(94) 1 2 3 4 5
(95)	I am confident enough to try a variety of teaching methods.	(95) 1 2 3 4 5
(96)	I prepare extra reference materials/notes for my pupils' specific needs	(96) 1 2 3 4 5
(97)	It is difficult for me to maintain a positive learning atmosphere in class	(97) 1 2 3 4 5
(98)	I pay attention to the effectiveness of my teaching.	(98) 1 2 3 4 5
(99)	I find the cooperation of parents important for improving my pupils' performance	(99) 1 2 3 4 5
(100)	I like to discuss teaching problems with others outside school time	(100) 1 2 3 4 5

Personal Data

Name: _____ College attended: _____ (2yr/3yr*)

School Teaching at present: _____

School Taught in the Previous Year: _____

Subjects and the Classes Taught at present: _____

_____

* Delete if inapplicable

Questionnaire One Response Data Sheet

(For Pilot Study)

(1) 0 yr/1 yr (2) 2/3 yr Cr (3) Prim/Sec (4) Sp (5) Serial No.

	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5
(1)		—				(41)	—					(81)				—	
(2)				—		(42)					—	(82)			—		
(3)					—	(43)					—	(83)		—			
(4)					—	(44)	—					(84)				—	
(5)					—	(45)					—	(85)				—	
(6)				—		(46)					—	(86)		—			
(7)	—					(47)			—			(87)					—
(8)					—	(48)					—	(88)	—				
(9)			—			(49)				—		(89)				—	
10)			—			(50)		—				(90)			—		
11)	—					(51)				—		(91)					—
12)	—					(52)				—		(92)	—				
13)		—				(53)					—	(93)				—	
14)			—			(54)			—			(94)	—				
15)					—	(55)		—				(95)			—		
16)		—				(56)				—		(96)					—
17)			—			(57)			—			(97)		—			
18)			—			(58)				—		(98)			—		
19)		—				(59)	—					(99)				—	
20)		—				(60)			—			100)				—	
21)		—				(61)				—							
22)			—			(62)	—										
23)					—	(63)		—									
24)	—					(64)		—									
25)	—					(65)			—								
26)				—		(66)					—						
27)	—					(67)		—				%					
28)	—					(68)				—		(1.2)	—		—		—
29)					—	(69)	—							—		—	
30)	—					(70)			—								
31)		—				(71)			—			%					
32)		—				(72)		—				(3)			—		—
33)					—	(73)	—							—		—	
34)				—		(74)		—									
35)	—					(75)		—									
36)				—		(76)	—					%					
37)			—			(77)			—			(4.5)	—		—		—
38)		—				(78)				—				—		—	
39)					—	(79)		—									
40)	—					(80)					—						

Raw Score — — — —

Converted Score — — — —

Grand Total —

Instructions

Appendix 9

This Questionnaire is designed to gather information about your experience in your class teaching during the period under review

Consider how often you have experienced the activities/decisions described in each of the following statements to take place in your teaching environment.

Indicate your response by circling the number on your response sheet corresponding to your chosen response Thank you.

1= almost never 2= rarely 3= sometimes 4= often 5= most of the time

(1)	I find my prime aim is to keep up with the progress of lessons as scheduled.	(1) 1 2 3 4 5
(2)	I am gaining confidence in the management of my class.	(2) 1 2 3 4 5
(3)	I am confident enough to try a variety of teaching methods	(3) 1 2 3 4 5
(4)	I supplement textbook content with different class activities	(4) 1 2 3 4 5
(5)	I feel too busy to pay much attention to extra-curricular activities organised by colleagues	(5) 1 2 3 4 5
(6)	The workload of marking pupils' assignments surprises me.	(6) 1 2 3 4 5
(7)	I work to achieve meaningful learning in lessons rather than simply covering the teaching syllabuses required.	(7) 1 2 3 4 5
(8)	My previous conceptions of teaching do not match with the actual school situation.	(8) 1 2 3 4 5
(9)	I am mainly concerned with the maintenance of classroom control.	(9) 1 2 3 4 5
(10)	It is difficult for me to maintain a positive learning atmosphere in class	(10) 1 2 3 4 5
(11)	Some pupils are unexpectedly difficult to deal with	(11) 1 2 3 4 5
(12)	I feel I am now a true professional teacher	(12) 1 2 3 4 5
(13)	I treat each pupil as a unique individual and cater for his/her needs as far as possible.	(13) 1 2 3 4 5
(14)	I am surprised by the real situations I meet in school.	(14) 1 2 3 4 5
(15)	I deal with individual pupils' problems through my close contact with their parents.	(15) 1 2 3 4 5
(16)	I feel a sense of 'swim or sink'.	(16) 1 2 3 4 5
(17)	I make use of my experiences of failures in teaching to improve my future teaching.	(17) 1 2 3 4 5

* Questionnaire One for Main Study

1= almost never 2= rarely 3= sometimes 4= often 5= most of the time

(18) In spite of some frustrations, I find teaching rewarding.	
(19) I am finding ways to put my ideals in education into practice	(18) 1 2 3 4 5
(20) I feel a sense of anxiety when facing my classes	(19) 1 2 3 4 5
(21) I find the attitudes of a few pupils very threatening indeed.	(20) 1 2 3 4 5
(22) I pay attention to the effectiveness of my teaching	(21) 1 2 3 4 5
(23) I concentrate on survival in class teaching	(22) 1 2 3 4 5
(24) I am beginning to develop my own ways of teaching in my classes.	(23) 1 2 3 4 5
(25) I am finding confidence to express my personal views towards school activities to the school administrators during meetings.	(24) 1 2 3 4 5
	(25) 1 2 3 4 5
(26) I think of leaving my teaching post.	(26) 1 2 3 4 5
(27) When I am designing and preparing lessons, I pay quite a lot of attention to sustaining my pupils' interests in learning	(27) 1 2 3 4 5
(28) My previous thinking in education seems to be unhelpful in solving practical problems.	(28) 1 2 3 4 5
	(29) 1 2 3 4 5
(29) Thinking about teaching after school makes me feel uncomfortable	(30) 1 2 3 4 5
(30) In assessing individual pupils, I pay more attention to pupils' understanding rather than to right or wrong answers.	(31) 1 2 3 4 5
(31) I feel I teach as efficiently as my colleagues	(32) 1 2 3 4 5
(32) I feel I am ready for new challenge in teaching	(33) 1 2 3 4 5
(33) I feel I am adequately sensitive to changes in the classroom learning atmosphere	(34) 1 2 3 4 5
(34) I am beginning to use group activities in my lessons.	(35) 1 2 3 4 5
(35) I feel my pupils are not learning very much.	(36) 1 2 3 4 5
(36) I have been developing my own mode of teaching according to my own belief in education	(37) 1 2 3 4 5
(37) Instructions from the principal/school administrators are more demanding than I expected.	

1- almost never 2- rarely 3- sometimes 4- often 5- most of the time

(38) If asked, I give suggestions for improvement in class/school facilities to the school administrators.	(38) 1 2 3 4 5
(39) I am beginning to feel intrinsic satisfaction in my teaching .	(39) 1 2 3 4 5
(40) I prepare extra reference materials/notes for my pupils' specific needs.	(40) 1 2 3 4 5
(41) I try to deal with individual pupils' learning problems.	(41) 1 2 3 4 5
(42) I feel I am really developing my personal potential in teaching	(42) 1 2 3 4 5
(43) I am beginning to take an active role in the general discipline of the school.	(43) 1 2 3 4 5
(44) I find I am beginning to be able to attend to slower pupils.	(44) 1 2 3 4 5
(45) Facing school situations, I feel puzzled and at a loss.	(45) 1 2 3 4 5
(46) I begin to feel interested in exploring different ways to make my lessons more effective.	(46) 1 2 3 4 5
(47) Individual needs and interests of my pupils are important things to consider in class teaching.	(47) 1 2 3 4 5
(48) I question my suitability for teaching	(48) 1 2 3 4 5
(49) I am aware I have been holding misconceptions about teaching.	(49) 1 2 3 4 5
(50) I find myself thinking about the needs of pupils.	(50) 1 2 3 4 5

Personal Data

Name: _____ College attended: NCE/GCE/SRBCE/TTC* (2yr/3yr*)

School Teaching during period reviewed: _____

Teaching experience: _____ (year*/month*/week*)

Subjects and Class Levels Taught during period reviewed: _____

_____

* Delete if not applicable

For BTDQ (ref. Appendix 9)

(1) Teaching Experience	(2) College Attended	(3) School Type	(4) With QR2	(5) Serial Number
_____	_____	_____	___	_____

	I	II	III	IV	V		I	II	III	IV	V		I	II	III	IV	V
•(1)		___				•(21)		___				(41)				___	
(2)			___			(22)			___			(42)					___
(3)			___			•(23)		___				(43)			___		
(4)				___		(24)			___			(44)			___		
•(5)		___				(25)			___			•(45)	___				
•(6)	___					•(26)	___					(46)				___	
(7)					___	(27)				___		(47)				___	
•(8)	___					•(28)		___				•(48)	___				
•(9)		___				•(29)	___					•(49)		___			
•(10)		___				(30)				___		(50)			___		
•(11)	___					(31)					___						
(12)					___	(32)					___						
(13)					___	(33)					___						
•(14)	___					(34)			___			% (1.2)	___	___			
(15)					___	•(35)		___						___	___		
•(16)		___				(36)					___	% (3)	___	___			
(17)				___		•(37)	___							___	___		
(18)				___		(38)			___			% (4.5)	___	___			
(19)				___		(39)				___				___	___		
•(20)	___					(40)					___						

Raw Score ___ ___ ___ ___ ___ Grand Total _____

Converted Score ___ ___ ___ ___ ___ _____

Appendix 10
(For TP4 Survey)

Instructions

This Questionnaire is designed to gather information about your experience in your class teaching during the period under review

Consider how often you have experienced the activities/decisions described in each of the following statements to take place in your teaching environment

Indicate your response by circling the number on your response sheet corresponding to your chosen response Thank you

---

1= almost never 2= rarely 3= sometimes 4= often 5= most of the time

(1) I find my prime aim is to keep up with the progress of lessons as scheduled	(1) 1 2 3 4 5
(2) I am gaining confidence in the management of my class	(2) 1 2 3 4 5
(3) I am confident enough to try a variety of teaching methods	(3) 1 2 3 4 5
(4) I supplement textbook content with different class activities	(4) 1 2 3 4 5
(5) I feel too busy to pay much attention to extra-curricular activities organised by colleagues	(5) 1 2 3 4 5
(6) The workload of marking pupils' assignments surprises me	(6) 1 2 3 4 5
(7) I work to achieve meaningful learning in lessons rather than simply covering the teaching syllabuses required	(7) 1 2 3 4 5
(8) My previous conceptions of teaching do not match with the actual school situation	(8) 1 2 3 4 5
(9) I am mainly concerned with the maintenance of classroom control	(9) 1 2 3 4 5
(10) It is difficult for me to maintain a positive learning atmosphere in class	(10) 1 2 3 4 5
(11) Some pupils are unexpectedly difficult to deal with	(11) 1 2 3 4 5
(12) I feel I am now a true professional teacher	(12) 1 2 3 4 5
(13) I treat each pupil as a unique individual and cater for his/her needs as far as possible	(13) 1 2 3 4 5
(14) I am surprised by the real situations I meet in school	(14) 1 2 3 4 5
(15) I deal with individual pupils' problems through my close contact with their parents	(15) 1 2 3 4 5
(16) I feel a sense of 'swim or sink'	(16) 1 2 3 4 5
(17) I make use of my experiences of failures in teaching to improve my future teaching	(17) 1 2 3 4 5

1= almost never 2= rarely 3= sometimes 4= often 5= most of the time

(18) In spite of some frustrations, I find teaching rewarding	(18) 1 2 3 4 5
(19) I am finding ways to put my ideals in education into practice	(19) 1 2 3 4 5
(20) I feel a sense of anxiety when facing my classes	(20) 1 2 3 4 5
(21) I find the attitudes of a few pupils very threatening indeed	(21) 1 2 3 4 5
(22) I pay attention to the effectiveness of my teaching	(22) 1 2 3 4 5
(23) I concentrate on survival in class teaching	(23) 1 2 3 4 5
(24) I am beginning to develop my own ways of teaching in my classes	(24) 1 2 3 4 5
(25) I am finding confidence to express my personal views towards school activities to the school administrators during meetings	(25) 1 2 3 4 5
(26) I think of leaving my teaching post	(26) 1 2 3 4 5
(27) When I am designing and preparing lessons, I pay quite a lot of attention to sustaining my pupils' interests in learning	(27) 1 2 3 4 5
(28) My previous thinking in education seems to be unhelpful in solving practical problems	(28) 1 2 3 4 5
(29) Thinking about teaching after school makes me feel uncomfortable	(29) 1 2 3 4 5
(30) In assessing individual pupils I pay more attention to pupils' understanding rather than to right or wrong answers	(30) 1 2 3 4 5
(31) I feel I teach as efficiently as my colleagues	(31) 1 2 3 4 5
(32) I feel I am ready for new challenge in teaching	(32) 1 2 3 4 5
(33) I feel I am adequately sensitive to changes in the classroom learning atmosphere	(33) 1 2 3 4 5
(34) I am beginning to use group activities in my lessons	(34) 1 2 3 4 5
(35) I feel my pupils are not learning very much	(35) 1 2 3 4 5
(36) I have been developing my own mode of teaching according to my own belief in education	(36) 1 2 3 4 5
(37) Instructions from the principal/school administrators are more demanding than I expected	(37) 1 2 3 4 5

1= almost never 2= rarely 3= sometimes 4= often 5= most of the time

(38) If asked, I give suggestions for improvement in class/school facilities to the school administrators.	(38) 1 2 3 4 5
(39) I am beginning to feel intrinsic satisfaction in my teaching	(39) 1 2 3 4 5
(40) I prepare extra reference materials/notes for my pupils' specific needs	(40) 1 2 3 4 5
(41) I try to deal with individual pupils' learning problems	(41) 1 2 3 4 5
(42) I feel I am really developing my personal potential in teaching	(42) 1 2 3 4 5
(43) I am beginning to take an active role in the general discipline of the school	(43) 1 2 3 4 5
(44) I find I am beginning to be able to attend to slower pupils	(44) 1 2 3 4 5
(45) Facing school situations, I feel puzzled and at a loss	(45) 1 2 3 4 5
(46) I begin to feel interested in exploring different ways to make my lessons more effective	(46) 1 2 3 4 5
(47) Individual needs and interests of my pupils are important things to consider in class teaching	(47) 1 2 3 4 5
(48) I question my suitability for teaching	(48) 1 2 3 4 5
(49) I am aware I have been holding misconceptions about teaching	(49) 1 2 3 4 5
(50) I find myself thinking about the needs of pupils.	(50) 1 2 3 4 5

Personal Data

Name: _____ College attended: NCE/GCE/SRBCE/TTC* (2yr/3yr*)

School Teaching during period reviewed: _____

Teaching experience _____ (year*/month*/week*)

Subjects and Class Levels Taught during period reviewed _____

_____

* I. - At what time during the past ten months, did you feel most helpless or at a loss ? (Please indicate by circling the appropriate month(s))

Sept Oct Nov Dec Jan Feb Mar Apr May Jun Others _____

* II - What was/were the most difficult problems/situations encountered at that time ? (Please name and explain)' _____ _____ (PTO)

Appendix 11
(For T.P 4 Survey)

Questionnaire on Beginning Teaching

This Questionnaire is designed to gather information about your full-time school work during the past ten months (Sept. 90 to June, 91)
Please answer the following questions and give your answers on separate blank sheets. Thank you for your co-operation.

During the past ten months, what are the most important events / difficulties that you have encountered in your primary/secondary* teaching ?

(A) Please list as many as you can, if possible, according to their order of importance to your school work.

(B) Choose two of the above mentioned events/difficulties and for each of them describe

(1) how frequently you have encountered it,
(e.g. every lesson, daily, no.of times in a week, etc)

(2) under what conditions you have come across it,
(e.g. in/out of classroom, during/after lesson,
in group/individually, with pupils/with staff)

(3) how you have dealt with it,
(e.g. your feelings, coping strategies, etc.)

(4) how you have solved it, if not, why and

(5) what experience/conclusion you can draw from it.

(C) Please give your general comments on

(1) your overall impression of the teaching experience,

(2) the practicability of knowledge learnt from the teacher education courses,

(3) the help you would expect from professionals

(D) Personal Data

(1) Name._____ (2) Sex: M/F*

(3) School _____

(4) Teacher Education Institute attended:
G.C.E. / N C.E. / S.R.B.C E / T.T C.*

(5) Course attended: Two-year / Three-year*

→ **If you have not responded to my questionnaire previously / this time*, please enlighten me with a reason for that**

_____

_____

_____ (PTO)

*Delete if inappropriate

Appendix 12

Items in Questionnaire One Sorted according to the Five States in the Perceived Competence of Teaching postulated in the Model of Learning-to-teach

Table A12.1

State One : State of Perplexity	
(6)*	The workload of marking pupils' assignments surprises me.
(8)	My previous conceptions of teaching do not match with the actual school situation.
(11)	Some pupils are unexpectedly difficult to deal with.
(14)	I am surprised by the real situations I meet in school.
(20)	I feel a sense of anxiety when facing my classes.
(26)	I think of leaving my teaching post.
(29)	Thinking about teaching after school makes me feel uncomfortable.
(37)	Instructions from the principal/school administrators are more demanding than I expected.
(45)	Facing school situations, I feel puzzled and at a loss.
(48)	I question my suitability for teaching.

* : The items are listed with the same numbers as they appear in the Questionnaire One distributed at all time points.

Table A12.2

State Two : State of Control Anxiety	
(1)	I find my prime aim is to keep up with the progress of lessons as scheduled.
(5)	I feel too busy to pay much attention to extra-currcular activities organized by colleagues.
(9)	I am mainly concerned with the maintenance of classroom control.
(10)	It is difficult for me to maintain a positive learning atmosphere in class.
(16)	I feel a sense of 'swim or sink'.
(21)	I find the attitudes of a few pupils very threatening indeed.
(23)	I concentrate on survival in teaching.
(28)	My previous thinking in education seems to be unhelpful in solving practical problems.
(35)	I feel my pupils are not learning much.
(49)	I am aware I have been holding misconceptions about teaching.

Table A12.3

State Three : State of Experimentation	
(2)	I am gaining confidence in the management of my class.
(3)	I am confident enough to try a variety of teaching methods.
(22)	I pay attention to the effectiveness of my teaching.
(24)	I am beginning to develop my own way of teaching in my class.
(25)	I am finding confidence to express my personal views towards school activities to the school administrators during meetings.
(34)	I am beginning to use group activities in my lessons.
(38)	If asked, I give suggestions for improvement in class/ school facilities to the school administrators.
(43)	I am beginning to take an active role in the general discipline of the school.
(44)	I find I am beginning to be able to attend to slower pupils.
(50)	I find myself thinking about the needs of pupils.

Table A12.4

State Four : State of Reflection	
(4)	I supplement textbook content with different class activities.
(17)	I make use of my experiences of failures in teaching to improve my future teaching.
(18)	In spite of some frustrations, I find teaching rewarding.
(19)	I am finding ways to put my ideals in education into practice.
(27)	When I am designing and preparing my lessons, I pay quite a lot of attention to sustaining my pupils' interest in learning.
(30)	In assessing individual pupils, I pay more attention to pupils' understanding rather than to right or wrong answers.
(39)	I am beginning to feel intrinsic satisfaction in my teaching.
(41)	I try to deal with individual pupils' learning problems.
(46)	I beging to feel interested in exploring different ways to make my lessons more effective.
(47)	Individual needs and interests of my pupils are important things to consider in class teaching.

Table A12.5

State Five : State of Integration	
(7)	I work to achieve meaningful learning in lessons rather than simply covering the teaching syllabuses required.
(12)	I feel I am a true professional teacher.
(13)	I treat each pupil as a unique individual and cater for his/her needs as far as possible.
(15)	I deal with individual pupils' problems through my close contact with their parents.
(31)	I feel I teach as effficiently as my colleagues.
(32)	I feel I am ready for new challenges in teaching.
(33)	I feel I am adequately sensitive to changes in the classroom learning atmosphere.
(36)	I have been developing my own mode of teaching according to my own belief in education.
(40)	I prepare extra reference materials/notes for my pupils' specific needs.
(42)	I feel I am really developing my personal potential in teaching.

Appendix 13

Table A 13.1 : Perplexity

SPSS/PC+

- - - - F A C T O R A N A L Y S I S - - - -

Analysis Number 1 Replacement of missing values with the mean

Extraction 1 for Analysis 1, Principal-Components Analysis (PC)

Initial Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
PER1	1.00000	*	1	1.61294	40.3	40.3
PER2	1.00000	*	2	.95936	24.0	64.3
PER3	1.00000	*	3	.82747	20.7	85.0
PER4	1.00000	*	4	.60024	15.0	100.0

PC Extracted 1 factors.

Factor Matrix:

	FACTOR 1
PER1	.59742
PER2	.35093
PER3	.74610
PER4	.75909

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
PER1	.35691	*	1	1.61294	40.3	40.3
PER2	.12315	*				
PER3	.55666	*				
PER4	.57622	*				

Table A 13.2 : Control Anxiety

SPSS/PC+ 8/2(

- - - - F A C T O R A N A L Y S I S - - - -

Analysis Number 1 Replacement of missing values with the mean

Extraction 1 for Analysis 1, Principal-Components Analysis (PC)

Initial Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
CON1	1.00000	*	1	1.62689	40.7	40.7
CON2	1.00000	*	2	.94429	23.6	64.3
CON3	1.00000	*	3	.81518	20.4	84.7
CON4	1.00000	*	4	.61363	15.3	100.0

PC Extracted 1 factors.

Factor Matrix:

	FACTOR 1
CON1	.49297
CON2	.49262
CON3	.74936
CON4	.76135

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
CON1	.24302	*	1	1.62689	40.7	40.7
CON2	.24267	*				
CON3	.56154	*				
CON4	.57965	*				

Table A 13.3 · Experimentation

SPSS/PC+ 8

- - - - F A C T O R A N A L Y S I S - - - -

Analysis Number 1 Replacement of missing values with the mean

Extraction 1 for Analysis 1, Principal-Components Analysis (PC)

Initial Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
EXP1	1.00000	*	1	1.63414	40.9	40.9
EXP2	1.00000	*	2	.92789	23.2	64.1
EXP3	1.00000	*	3	.84233	21.1	85.1
EXP4	1.00000	*	4	.59563	14.9	100.0

PC Extracted 1 factors.

Factor Matrix:

	FACTOR 1
EXP1	.52855
EXP2	.52642
EXP3	.73596
EXP4	.73213

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
EXP1	.27936	*	1	1.63414	40.9	40.9
EXP2	.27712	*				
EXP3	.54164	*				
EXP4	.53601	*				

Table A 13 4 : Reflection

SPSS/PC+ 8/

- - - - F A C T O R A N A L Y S I S - - - -

Analysis Number 1 Replacement of missing values with the mean

Extraction 1 for Analysis 1, Principal-Components Analysis (PC)

Initial Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
REF1	1.00000	*	1	1.68476	42.1	42.1
REF2	1.00000	*	2	.90189	22.5	64.7
REF3	1.00000	*	3	.77099	19.3	83.9
REF4	1.00000	*	4	.64236	16.1	100.0

PC Extracted 1 factors.

Factor Matrix:

	FACTOR 1
REF1	.55245
REF2	.62824
REF3	.69403
REF4	.70936

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
REF1	.30520	*	1	1.68476	42.1	42.1
REF2	.39469	*				
REF3	.48168	*				
REF4	.50319	*				

Table A 13.5 : Integration

SPSS/PC+ 8/

- - - - F A C T O R A N A L Y S I S - - - -

Analysis Number 1 Replacement of missing values with the mean

Extraction 1 for Analysis 1, Principal-Components Analysis (PC)

Initial Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
INT1	1.00000	*	1	1.59609	39.9	39.9
INT2	1.00000	*	2	.96606	24.2	64.1
INT3	1.00000	*	3	.81290	20.3	84.4
INT4	1.00000	*	4	.62494	15.6	100.0

PC Extracted 1 factors.

Factor Matrix:

	FACTOR 1
INT1	.55442
INT2	.51638
INT3	.71550
INT4	.71422

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
INT1	.30738	*	1	1.59609	39.9	39.9
INT2	.26665	*				
INT3	.51195	*				
INT4	.51011	*				

Table A 13.6 : mean Survival state

SPSS/PC+ 8

- - - - F A C T O R A N A L Y S I S - - - -

Analysis Number 1 Replacement of missing values with the mean

Extraction 1 for Analysis 1, Principal-Components Analysis (PC)

Initial Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
SUR1	1.00000	*	1	1.70166	42.5	42.5
SUR2	1.00000	*	2	.91321	22.8	65.4
SUR3	1.00000	*	3	.81831	20.5	85.8
SUR4	1.00000	*	4	.56682	14.2	100.0

PC Extracted 1 factors.

Factor Matrix:

	FACTOR 1
SUR1	.56941
SUR2	.45187
SUR3	.75403
SUR4	.77761

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
SUR1	.32423	*	1	1.70166	42.5	42.5
SUR2	.20419	*				
SUR3	.56856	*				
SUR4	.60468	*				

Table A 13 7 : mean Growth State

SPSS/PC+

- - - - F A C T O R A N A L Y S I S - - - -

Analysis Number 1 Replacement of missing values with the mean

Extraction 1 for Analysis 1, Principal-Components Analysis (PC)

Initial Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
GRO1	1.00000	*	1	1.73098	43.3	43.3
GRO2	1.00000	*	2	.92110	23.0	66.3
GRO3	1.00000	*	3	.78740	19.7	86.0
GRO4	1.00000	*	4	.56052	14.0	100.0

PC Extracted 1 factors.

Factor Matrix:

	FACTOR 1
GRO1	.57185
GRO2	.56257
GRO3	.72634
GRO4	.74827

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
GRO1	.32701	*	1	1.73098	43.3	43.3
GRO2	.31649	*				
GRO3	.52757	*				
GRO4	.55991	*				

Table A 13.8 : Totals

SPSS/PC+ 8/

- - - - F A C T O R A N A L Y S I S - - - -

Analysis Number 1 Replacement of missing values with the mean

Extraction 1 for Analysis 1, Principal-Components Analysis (PC)

Initial Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
TOTAL1	1.00000	*	1	1.85649	46.4	46.4
TOTAL2	1.00000	*	2	.90197	22.5	69.0
TOTAL3	1.00000	*	3	.77375	19.3	88.3
TOTAL4	1.00000	*	4	.46779	11.7	100.0

PC Extracted 1 factors.

Factor Matrix

	FACTOR 1
TOTAL1	.61522
TOTAL2	.49085
TOTAL3	.77341
TOTAL4	.79931

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
TOTAL1	.37850	*	1	1.85649	46.4	46.4
TOTAL2	.24094	*				
TOTAL3	.59816	*				
TOTAL4	.63890	*				

From A Student Teacher to A Beginning Teacher 8,
A Study on the Process of Learning to Teach

- - - - F A C T O R A N A L Y S I S - - - -

Analysis Number 1 Replacement of missing values with the mean

Extraction 1 for Analysis 1, Principal-Components Analysis (PC)

Initial Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
PER1	1.00000	*	1	2.46366	49.3	49.3
CON1	1.00000	*	2	1.55479	31.1	80.4
EXP1	1.00000	*	3	.38845	7.8	88.1
REF1	1.00000	*	4	.32047	6.4	94.5
INT1	1.00000	*	5	.27263	5.5	100.0

PC Extracted 2 factors.

Factor Matrix:

	FACTOR 1	FACTOR 2
PER1	.47536	.77862
CON1	.31061	.86570
EXP1	.85113	-.26489
REF1	.80811	-.30249
INT1	.87393	-.19350

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
PER1	.83221	*	1	2.46366	49.3	49.3
CON1	.84591	*	2	1.55479	31.1	80.4
EXP1	.79460	*				
REF1	.74454	*				
INT1	.80120	*				

Varimax Rotation 1, Extraction 1, Analysis 1 - Kaiser Normalizatio

Varimax converged in 3 iterations.

Rotated Factor Matrix:

	FACTOR 1	FACTOR 2
PER1	.16321	.89754
CON1	-.02184	.91947
EXP1	.88943	.05925
REF1	.86283	.00868
INT1	.88500	.13406

Factor Transformation Matrix:

	FACTOR 1	FACTOR 2
FACTOR 1	.93296	.35997
FACTOR 2	-.35997	.93296

Table A14.2 : TP2 (October, 1990)

From A Student Teacher to A Beginning Teacher 8/
A Study on the Process of Learning to Teach

- - - - F A C T O R A N A L Y S I S - - - -

Analysis Number 1 Replacement of missing values with the mean

Extraction 1 for Analysis 1, Principal-Components Analysis (PC)

Initial Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
PER2	1.00000	*	1	2.61020	52.2	52.2
CON2	1.00000	*	2	1.23269	24.7	76.9
EXP2	1.00000	*	3	.48069	9.6	86.5
REF2	1.00000	*	4	.35685	7.1	93.6
INT2	1.00000	*	5	.31958	6.4	100.0

PC Extracted 2 factors.

Factor Matrix:

	FACTOR 1	FACTOR 2
PER2	.56290	.67272
CON2	.53107	.70529
EXP2	.82119	-.29504
REF2	.82344	-.30074
INT2	.81173	-.32437

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
PER2	.76940	*	1	2.61020	52.2	52.2
CON2	.77946	*	2	1.23269	24.7	76.9
EXP2	.76140	*				
REF2	.76850	*				
INT2	.76412	*				

Varimax Rotation 1, Extraction 1, Analysis 1 - Kaiser Normalizatio

Varimax converged in 3 iterations.

Rotated Factor Matrix:

	FACTOR 1	FACTOR 2
PER2	.15890	.86264
CON2	.11516	.87533
EXP2	.86005	.14734
REF2	.86482	.14350
INT2	.86625	.11716

Factor Transformation Matrix:

	FACTOR 1	FACTOR 2
FACTOR 1	.87049	.49219
FACTOR 2	-.49219	.87049

Table A14.3. TP3 (February, 1991)

From A Student Teacher to A Beginning Teacher 8/2
A Study on the Process of Learning to Teach

- - - - F A C T O R A N A L Y S I S - - - -

Analysis Number 1 Replacement of missing values with the mean

Extraction 1 for Analysis 1, Principal-Components Analysis (PC)

Initial Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
PER3	1.00000	*	1	2.78525	55.7	55.7
CON3	1.00000	*	2	1.26540	25.3	81.0
EXP3	1.00000	*	3	.39063	7.8	88.8
REF3	1.00000	*	4	.29378	5.9	94.7
INT3	1.00000	*	5	.26495	5.3	100.0

PC Extracted 2 factors.

Factor Matrix:

	FACTOR 1	FACTOR 2
PER3	.65328	.64670
CON3	.60916	.69566
EXP3	.79181	-.34949
REF3	.79979	-.37248
INT3	.84899	-.31993

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
PER3	.84500	*	1	2.78525	55.7	55.7
CON3	.85502	*	2	1.26540	25.3	81.0
EXP3	.74910	*				
REF3	.77840	*				
INT3	.82313	*				

Varimax Rotation 1, Extraction 1, Analysis 1 - Kaiser Normalization.

Varimax converged in 3 iterations.

Rotated Factor Matrix:

	FACTOR 1	FACTOR 2
PER3	.19253	.89885
CON3	.12880	.91566
EXP3	.85392	.14113
REF3	.87319	.12626
INT3	.88558	.19717

Factor Transformation Matrix:

	FACTOR 1	FACTOR 2
FACTOR 1	.83676	.54757
FACTOR 2	-.54757	.83676

Table A14.4 · TP4 (June, 1991)

From A Student Teacher to A Beginning Teacher 8/2
A Study on the Process of Learning to Teach

- - - - F A C T O R A N A L Y S I S - - - -

Analysis Number 1 Replacement of missing values with the mean

Extraction 1 for Analysis 1, Principal-Components Analysis (PC)

Initial Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
PER4	1.00000	*	1	2.67209	53.4	53.4
CON4	1.00000	*	2	1.28026	25.6	79.0
EXP4	1.00000	*	3	.40260	8.1	87.1
REF4	1.00000	*	4	.35187	7.0	94.1
INT4	1.00000	*	5	.29318	5.9	100.0

PC Extracted 2 factors.

Factor Matrix:

	FACTOR 1	FACTOR 2
PER4	.64103	.63900
CON4	.56871	.70945
EXP4	.74792	-.44683
REF4	.82822	-.32375
INT4	.83211	-.25328

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
PER4	.81924	*	1	2.67209	53.4	53.4
CON4	.82675	*	2	1.28026	25.6	79.0
EXP4	.75905	*				
REF4	.79076	*				
INT4	.75656	*				

Varimax Rotation 1, Extraction 1, Analysis 1 - Kaiser Normalization 8/

Varimax converged in 3 iterations.

Rotated Factor Matrix:

	FACTOR 1	FACTOR 2
PER4	.19396	.88409
CON4	.09504	.90428
EXP4	.87077	.02830
REF4	.87180	.17526
INT4	.83699	.23664

Factor Transformation Matrix:

	FACTOR 1	FACTOR 2
FACTOR 1	.84135	.54049
FACTOR 2	-.54049	.84135

Appendix 15

Table A15.1
Summary Table of the Correlation Coefficients between Total Scores and the Dominant State Scores attained by Individual Respondents at Four Time Points

	Dominant TP1	Dominant TP2	Dominant TP3	Dominant TP4
Total (TP1)	0.6422**			
Total (TP2)		0.6418**		
Total (TP3)			0.6277**	
Total (TP4)				0.6600**

TP1 : Time Point One

** : One-tailed significance at .001 level

Appendix 16

Table A16.1

Summary Table of
Analysis of Variance for State of Perplexity
by Time and Level

	SS	df	MS	F
A (Level)@	27.97	1	27.97	1.10
B (Time)#	176.40	3	58.80	2.31
A X B	35.72	3	11.91	0.46
Within cell	12923.64	508	25.44	

$F_{.95\ (1,508)} = 3.84$; $F_{.95\ (3,508)} = 2.60$

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A16 2

Summary Table of
Analysis of Variance for State of Control Anxiety
by Time and Level

	SS	df	MS	F
A (Level)@	1.12	1	1.12	0.06
B (Time)#	76.49	3	25.50	1.44
A X B	0.12	3	0.04	0.002
Within cell	9023.70	508	17.76	

$F_{.95\ (1,508)} = 3.84$; $F_{.95\ (3,508)} = 2.60$

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A16 3

Summary Table of
Analysis of Variance for State of Experimentation
by Time and Level

	SS	df	MS	F
A (Level)@	27.70	1	27.70	1.51
B (Time)#	205.17	3	68.39	3.72*
A X B	77.59	3	25.86	1.41
Within cell	9351.59	508	18.41	

$F_{.95\ (1,508)} = 3.84$; $F_{.95\ (3,508)} = 2.60$

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A16.4

Summary Table of
Analysis of Variance for State of Reflection
by Time and Level

	SS	df	MS	F
A (Level)@	68.20	1	68.20	3.47
B (Time)#	840.95	3	280.32	14.26*
A X B	104.71	3	34.90	1.78
Within cell	9986.54	508	19.66	

$F_{.95\ (1,508)} = 3.84$; $F_{.95\ (3,508)} = 2.60$

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A16.5

Summary Table of
Analysis of Variance for State of Integration
by Time and Level

	SS	df	MS	F
A (Level)@	5.14	1	5.14	0.26
B (Time)#	299.62	3	99.87	4.98*
A X B	207.36	3	69.12	3.44*
Within cell	10196.70	508	20.07	

$F_{.95\ (1,508)} = 3.84$; $F_{.95\ (3,508)} = 2.60$

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : One Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A16.6

Summary Table of
Analysis of Variance for State Group of 'Survival'
by Time and Level

	SS	df	MS	F
A (Level)@	10.32	1	10.32	0.58
B (Time)#	105.28	3	35.09	1.98
A X B	0.18	3	0.06	0.003
Within cell	8995.23	508	17.71	

$F_{.95\ (1,508)} = 3.84$; $F_{.95\ (3,508)} = 2.60$

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A16 7

Summary Table of
Analysis of Variance for State Group of 'Growth'
by Time and Level

	SS	df	MS	F
A (Level)@	27.68	1	27.68	1.87
B (Time)#	303.44	3	101.15	6.82*
A X B	127.23	3	42.41	2.86*
Within cell	7537.16	508	14.84	

$F_{.95\ (1,508)} = 3.84$; $F_{.95\ (3,508)} = 2.60$

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A16.8

Summary Table of
Analysis of Variance for Mean Totals
by Time and Level

	SS	df	MS	F
A (Level)@	493.39	1	493.39	1.86
B (Time)#	3786.17	3	1262.06	4.76*
A X B	1400.55	3	466.85	1.76
Within cell	134657.76	508	265.07	

$F_{.95\ (1,508)} = 3.84$; $F_{.95\ (3,508)} = 2.60$

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A16.9

Summary Table of q-values from Tukey Method used as A Posteriori Tests for the Significant Duration of Time Points: the Whole Cross-sectional Group

	TP1 to TP2	TP2 to TP3	TP3 to TP4
Experimentation	4.810*	1.519	-0.584
Reflection	8.345*	-2.707	1.981
Integration	4.595*	-3.055	-1.657
Mean Growth State	6.769*	-2.789	-0.090
Mean Totals	5.130*	-1.032	-0.068

Formula: $q = \dfrac{X_J - X_{J'}}{\sqrt{\dfrac{MS\ w.cell}{n\#}}}$ $\qquad q_{0.95(4,508)} = 3.63$

: Harmonic mean of n at time J and n at time J'

Table A16 10

Simple Main Effects from ANOVA of Perplexity
(Cross-sectional Study)

Source of Variance	SS	df	MS	F
Time dimensions				
in Primary	101.8	3	33.93	1.33
in Secondary	87.5	3	29.17	1.15
within cell	12923.6	508	25.44	

* : $F_{.95\ (3,508)} = 2.60$

Table A16_11

Simple Main Effects from ANOVA of Control Anxiety
(Cross-sectional Study)

Source of Variance	SS	df	MS	F
Time dimensions				
in Primary	20.9	3	6.97	0.39
in Secondary	77.6	3	25.87	1.46
within cell	9023.7	508	17.76	

* : $F_{.95\ (3,508)} = 2.60$

Table A16.12

Simple Main Effects from ANOVA of Experimentation
(Cross-sectional Study)

Source of Variance	SS	df	MS	F
Time dimensions				
in Primary	145.3	3	48.43	2.63*
in Secondary	156.6	3	52.20	2.84*
within cell	9351.6	508	18.41	

* : $F_{.95\ (3,508)} = 2.60$

Table A16.13

Simple Main Effects from ANOVA of Reflection
(Cross-sectional Study)

Source of Variance	SS	df	MS	F
Time dimensions				
in Primary	354.6	3	118.20	6.01*
in Secondary	571.9	3	190.60	9.70*
within cell	9986.6	508	19.66	

* : $F_{.95\ (3,508)} = 2.60$

Table A16 14

Simple Main Effects from ANOVA of Integration
(Cross-sectional Study)

Source of Variance	SS	df	MS	F
Time dimensions				
in Primary	361.7	3	120.57	6.69*
in Secondary	77.2	3	25.73	1.28
within cell	10196.7	508	20.07	

* : $F_{.95\ (3,508)} = 2.60$

Table A16.15

Simple Main Effects from ANOVA of Mean 'Survival'
(Cross-sectional Study)

Source of Variance	SS	df	MS	F
Time dimensions				
in Primary	41.8	3	13.93	0.79
in Secondary	81.4	3	27.13	1.53
within cell	8995.2	508	17.71	

* : $F_{.95\ (3,508)} = 2.60$

Table A16.16

Simple Main Effects from ANOVA of Mean 'Growth'
(Cross-sectional Study)

Source of Variance	SS	df	MS	F
Time dimensions				
in Primary	201.8	3	67.27	4.53*
in Secondary	205.4	3	68.47	4.61*
within cell	7537.2	508	14.84	

* : $F_{.95\ (3,508)} = 2.60$

Table A16 17

Simple Main Effects from ANOVA of Mean Totals
(Cross-sectional Study)

Source of Variance	SS	df	MS	F
Time dimensions				
in Primary	1934.5	3	644.83	2.43
in Secondary	3248.3	3	1082.80	4.08*
within cell	134657.8	508	265.07	

* : $F_{.95\ (3,508)} = 2.60$

Table A16 18

Summary Table of q-values from Tukey Method used as A Posteriori Tests for the Significant Duration of Time Points: the Primary Cross-sectional Subgroup

	TP1 to TP2	TP2 to TP3	TP3 to TP4
Experimentation	3.23	-3.57	-0.50
Reflection	5.81*	-4.05*	1.38
Integration	1.88	-4.13*	-1.74
Mean Growth State	4.17*	-4.48*	0.04

Formula: $q = \dfrac{X_J - X_{J'}}{\sqrt{\dfrac{MS\ w.cell}{n\#}}}$ $\quad q_{0.95(4,508)} = 3.63$

: Harmonic mean of n at time j and n at time j'

Table A16 19

Summary Table of q-values from Tukey Method used as A Posteriori Tests for the Significant Duration of Time Points: the Secondary Cross-sectional Subgroup

	TP1 to TP2	TP2 to TP3	TP3 to TP4
Experimentation	3.02	0.78	-1.17
Reflection	5.83*	-0.48	1.37
Mean Growth State	4.38*	-0.14	-0.21
Mean Totals	3.39	0.94	-0.42

Formula: $q = \dfrac{X_J - X_{J'}}{\sqrt{\dfrac{MS\ w.cell}{n\#}}}$ $\quad q_{0.95(4,508)} = 3.63$

: Harmonic mean of n at time j and n at time j'

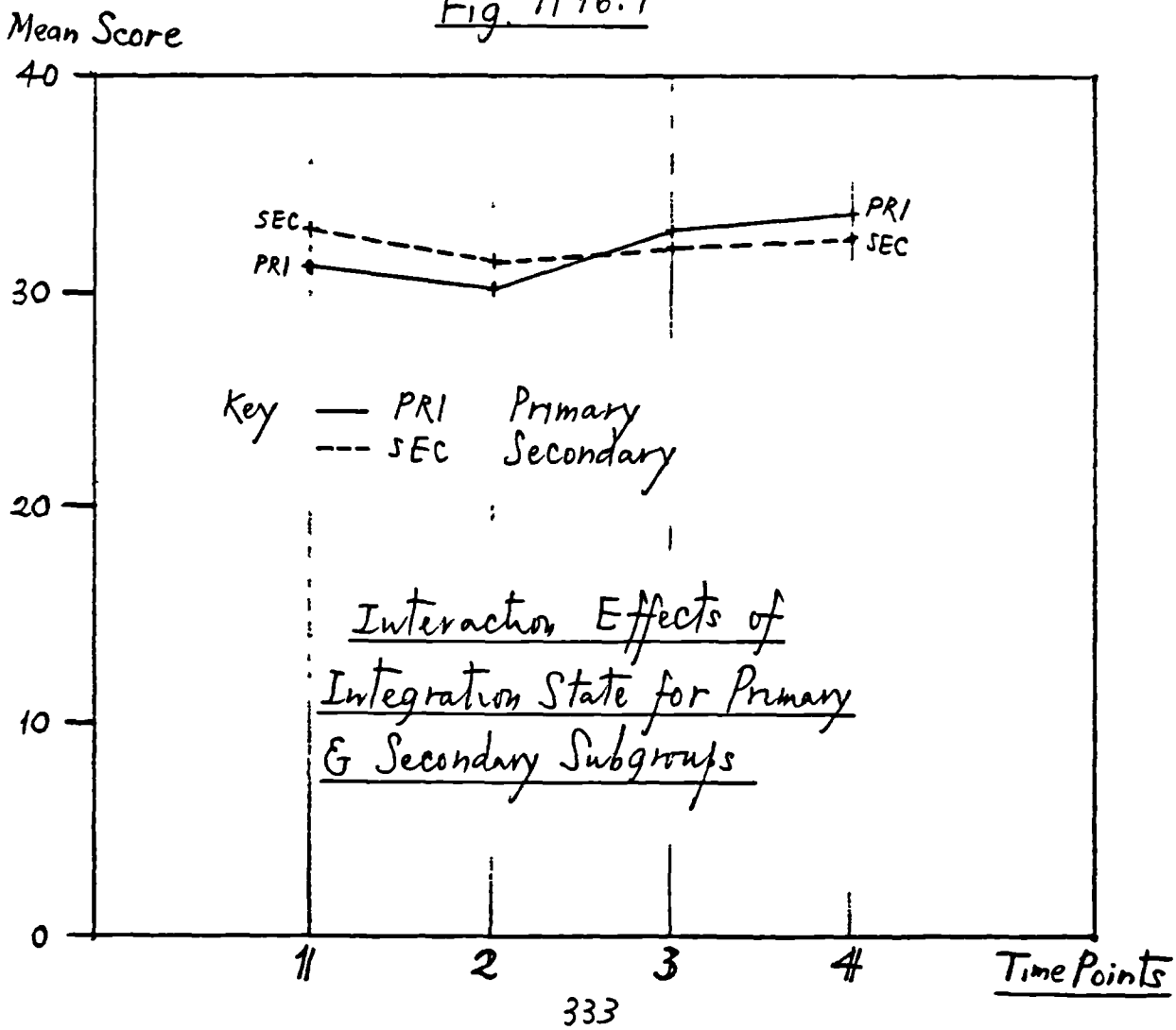
Table A16 20

Cell Means of
Mean Scores of Integration State for
Two-way ANOVA Computations

	TP 1	TP 2	TP 3	TP 4
Primary	31.51	30.13	32.81	33.83
Secondary	33.01	31.68	32.02	32.41

TP 1 : Half month before graduation
TP 2 : Two months in full-time teaching
TP 3 : Six monthe in full-time teaching
TP 4 : ten months in full-time teaching

Fig. A 16.1



Interaction Effects of Integration State for Primary & Secondary Subgroups

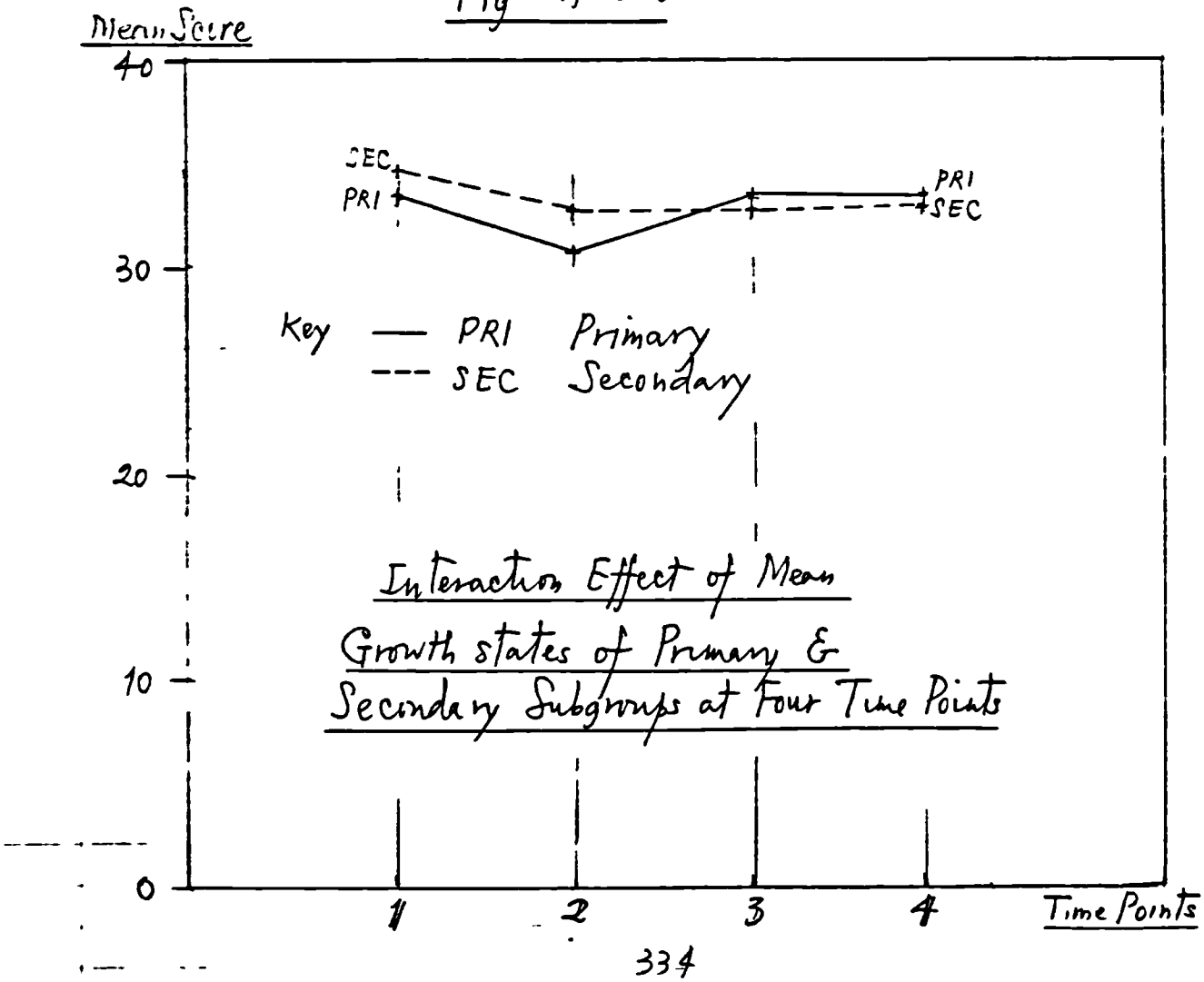
Table A16 21

Cell Means of
Mean Scores of Mean Growth State for
Two-way ANOVA Computations

	TP 1	TP 2	TP 3	TP 4
Primary	33.48	30.85	33.35	33.33
Secondary	34.62	32.71	32.77	32.86

TP 1 : Half month before graduation
TP 2 . Two months in full-time teaching
TP 3 : Six monthe in full-time teaching
TP 4 : ten months in full-time teaching

Fig A16 2



Interaction Effect of Mean Growth states of Primary & Secondary Subgroups at Four Time Points

Appendix 17

Table A17.1

Summary Table of
Analysis of Variance with Repeated Measures
for State of Perplexity
by Time and Level
(N = 15)

	SS	df	MS	F	Sig. F
Between Subjects		14			
A (Level)@	4.67	1	4.67	0.09	0.763
Subjects w. groups	639.93	13	49.23		
Within Subjects		45			
B (Time)#	14.41	3	4.80	0.61	0.611
A X B	8.34	3	2.78	0.33	0.786
B x Subjects w. groups	306.13	39	7.85		
$F_{.95\ (1,13)}$ = 4.67 ; $F_{.95\ (3,39)}$ = 2.92					

* : F value significant at 0.05 level

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A17.2

Summary Table of
Analysis of Variance with Repeated Measures
for State of Control Anxiety
by Time and Level
(N = 15)

	SS	df	MS	F	Sig. F
Between Subjects		14			
A (Level)@	1.00	1	1 00	0.02	0.900
Subjects w. groups	797.93	13	61.38		
Within Subjects		45			
B (Time)#	22.47	3	7.49	0.65	0.586
A X B	17.27	3	5.76	0.50	0.683
B x Subjects w. groups	447.79	39	11.48		

$F_{.95\ (1,13)} = 4.67$; $F_{.95\ (3,39)} = 2.92$

* : F value significant at 0.05 level

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A17.3

Summary Table of
Analysis of Variance with Repeated Measures
for State of Experimentation
by Time and Level
(N = 15)

	SS	df	MS	F	Sig. F
Between Subjects		14			
A (Level)@	20.07	1	20.07	0.28	0.603
Subjects w. groups	919.26	13	70.71		
Within Subjects		45			
B (Time)#	95.68	3	31.89	3.16*	0.035
A X B	6.47	3	2.16	0.21	0.886
B x Subjects w. groups	393.79	39	10.10		

$F_{.95\ (1,13)} = 4.67$; $F_{.95\ (3,39)} = 2.92$

* : F value significant at 0.05 level

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A17.4

Summary Table of
Analysis of Variance with Repeated Measures
for State of Reflection
by Time and Level
(N = 15)

	SS	df	MS	F	Sig. F
Between Subjects		14			
A (Level)@	183.47	1	183.47	2.42	0.143
Subjects w. groups	983.76	13	75.67		
Within Subjects		45			
B (Time)#	184.10	3	61.37	8.28*	0.000
A X B	3.30	3	1.10	0.15	0.930
B x Subjects w. groups	289.07	39	7.41		

$F_{.95\ (1,13)} = 4.67$; $F_{.95\ (3,39)} = 2.92$

* : F value significant at 0.05 level

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A175

Summary Table of
Analysis of Variance with Repeated Measures
for State of Integration
by Time and Level
(N = 15)

	SS	df	MS	F	Sig. F
Between Subjects		14			
A (Level)@	48.40	1	48.40	0.83	0.379
Subjects w. groups	759.93	13	58.45		
Within Subjects		45			
B (Time)#	111.04	3	37.01	3.66*	0.020
A X B	29.18	3	9.73	0.96	0.421
B x Subjects w. groups	394.72	39	10.12		
$F_{.95\ (1,13)}$ = 4.67 ; $F_{.95\ (3,39)}$ = 2.92					

* : F value significant at 0.05 level

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A17.6

Summary Table of
Analysis of Variance with Repeated Measures
for State Group of 'Survival'
by Time and Level
(N = 15)

	SS	df	MS	F	Sig. F
Between Subjects		14			
A (Level)@	2.50	1	2.50	0.05	0.830
Subjects w. groups	674.08	13	51.85		
Within Subjects		45			
B (Time)#	4.37	3	1.46	0.19	0.901
A X B	7.13	3	2.38	0.31	0.815
B x Subjects w. groups	294.58	39	7.55		

$F_{.95\ (1,13)} = 4.67$; $F_{.95\ (3,39)} = 2.92$

* : F value significant at 0.05 level

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A177

Summary Table of
Analysis of Variance with Repeated Measures
for State Group of 'Growth'
by Time and Level
(N = 15)

	SS	df	MS	F	Sig. F
Between Subjects		14			
A (Level)@	69.34	1	69.34	1.17	0.299
Subjects w. groups	771.93	13	59.38		
Within Subjects		45			
B (Time)#	96.19	3	32.06	5.72*	0.002
A X B	9.32	3	3.11	0.55	0.648
B x Subjects w. groups	218.58	39	5.60		
$F_{.95\ (1,13)}$ = 4.67 ; $F_{.95\ (3,39)}$ = 2.92					

* : F value significant at 0.05 level

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A17.8

Summary Table of
Analysis of Variance with Repeated Measures
for Mean Totals
by Time and Level
(N = 15)

	SS	df	MS	F	Sig. F
Between Subjects		14			
A (Level)@	792.10	1	792.10	0.67	0.428
Subjects w. groups	15371.83	13	1182.45		
Within Subjects		45			
B (Time)#	992.63	3	330.88	3.04*	0.040
A X B	73.17	3	24.39	0.22	0.879
B x Subjects w. groups	4243.17	39	108.80		

$F_{.95\ (1,13)} = 4.67$; $F_{.95\ (3,39)} = 2.92$

* : F value significant at 0.05 level

@ : Primary and Secondary Respondents

: The Four Time Points ---

(1) Time Point One : Half Month before Graduation
(2) Time Point Two : Two-month teaching experience
(3) Time Point Three : Six-month teaching experience
(4) Time Point Four : Ten-month teaching experience

Table A17.9

Summary Table of q-values from Tukey Method used as A Posteriori Tests for the Significant Duration of Time Points: the Whole Longitudinal Group

	TP1 to TP2	TP2 to TP3	TP3 to TP4
Experimentation	4.302*	-2.194	-0.812
Reflection	7.014*	-2.370	-1.423
Integration	2.191	-3.652*	-1.379
Mean Growth State	5.601*	-3.527	-1.528
Mean Totals	5.146*	-3.010	-2.312

Formula: $q = \dfrac{Xj - Xj'}{\sqrt{\dfrac{MS\ BxSubj.w.group}{n}}}$; $q_{0.95(4,84)} = 3.63$

Table A1710

Simple Main Effects from ANOVA of Perplexity
(Longitudinal Studies)

Source of Variance	SS	df	MS	F
Time dimensions (B)				
in Primary	2.75	3	0.92	0.12
in Secondary	17.13	3	5.71	0.73
B x Subj. w. group	306.13	39	7.85	

* : $F_{.95\ (3,39)} = 2.92$

Table A1711

Simple Main Effects from ANOVA of Control Anxiety
(Longitudinal Studies)

Source of Variance	SS	df	MS	F
Time dimensions (B)				
in Primary	19.00	3	6.33	0.55
in Secondary	20.46	3	6.82	0.59
B x Subj. w. group	447.79	39	11.48	

* : $F_{.95\ (3,39)} = 2.92$

Table A17.12

Simple Main Effects from ANOVA of Experimentation
(Longitudinal Studies)

Source of Variance	SS	df	MS	F
Time dimensions (B)				
in Primary	61.00	3	20.33	2.01
in Secondary	44.45	3	14.82	1.47
B x Subj. w. group	393.79	39	10.10	

* : $F_{.95\ (3,39)} = 2.92$

Table A17.13

Simple Main Effects from ANOVA of Reflection
(Longitudinal Studies)

Source of Variance	SS	df	MS	F
Time dimensions (B)				
in Primary	115.56	3	38.52	5.20*
in Secondary	79.12	3	26.37	3.56*
B x Subj. w. group	289.07	39	7.41	

* : $F_{.95\ (3,39)} = 2.92$

Table A17 14

Simple Main Effects from ANOVA of Integration
(Longitudinal Studies)

Source of Variance	SS	df	MS	F
Time dimensions (B)				
in Primary	158.78	3	52.93	5.23*
in Secondary	11.00	3	3.67	0.36
B x Subj. w. group	394.72	39	10.12	

* : $F_{.95\ (3,39)} = 2.92$

Table A17 15

Simple Main Effects from ANOVA of Mean 'Survival'
(Longitudinal Studies)

Source of Variance	SS	df	MS	F
Time dimensions (B)				
in Primary	7.19	3	2.40	0.32
in Secondary	4.79	3	1.60	0.21
B x Subj. w. group	294.58	39	7.55	

* : $F_{.95\ (3,39)} = 2.92$

Table A17 16

Simple Main Effects from ANOVA of Mean 'Growth' (Longitudinal Studies)

Source of Variance	SS	df	MS	F
Time dimensions (B)				
in Primary	184.66	3	61.55	10.99*
in Secondary	54.54	3	18.18	3.25*
B x Subj. w. group	218.58	508	5.60	

* : $F_{.95\ (3,39)} = 2.92$

Table A17 17

Simple Main Effects from ANOVA of Mean Totals (Longitudinal Studies)

Source of Variance	SS	df	MS	F
Time dimensions (B)				
in Primary	692.75	3	346.38	3.18*
in Secondary	426.17	3	142.11	1.31
B x Subj. w. group	4343.17	39	108.80	

* : $F_{.95\ (3,39)} = 2.92$

Table A1718

Summary Table of q-values from Tukey Method used as A Posteriori Tests for the Significant Duration of Time Points: the Primary Longitudinal Subgroup

	TP1 to TP2	TP2 to TP3	TP3 to TP4
Reflection	5.39*	-1.96	-1.47
Integration	2.31	-3.89*	-1.46
Mean Growth State	4.51*	-3.29	-1.69
Mean Totals	2.65	-1.63	-1.72

Formula: $q = \dfrac{X_J - X_{J'}}{\sqrt{\dfrac{MS\ BxSub_J.w.group}{n}}}$; $q_{0.95(4,84)} = 3.63$

Table A1719

Summary Table of q-values from Tukey Method used as A Posteriori Tests for the Significant Duration of Time Points: the Secondary Longitudinal Subgroup

	TP1 to TP2	TP2 to TP3	TP3 to TP4
Reflection	5.51*	-1.65	-0.55
Mean Growth State	4.08*	-1.90	-0.43

Formula: $q = \dfrac{X_J - X_{J'}}{\sqrt{\dfrac{MS\ BxSub_J.w.group}{n}}}$; $q_{0.95(4,84)} = 3.63$